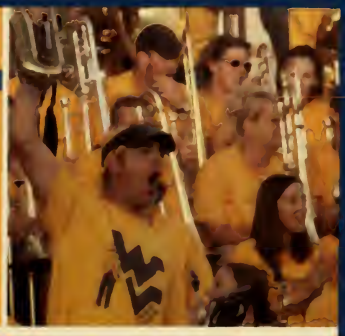
West Virginia University

2003-2005

Undergraduate Catalog



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West Virginia University Undergraduate Catalog 2003-2005

College of Business and Economics
College of Creative Arts
College of Engineering and Mineral Resources
College of Human Resources and Education
Davis College of Agriculture, Forestry, and Consumer Sciences
Eberly College of Arts and Sciences
Perley Isaac Reed School of Journalism
School of Dentistry
School of Medicine
School of Nursing
School of Pharmacy
School of Physical Education

West Virginia University is a land-grant, research institution founded in 1867. WVU is a student-centered learning community meeting the changing needs of West Virginia and the nation through teaching, research, service, and technology.

The *West Virginia University Undergraduate Catalog 2003-2005* is a general source of information about course offerings, academic programs and requirements, expenses, rules, and policies. In order to reach the goals and fulfill the mission of the University, the courses, requirements, and regulations contained herein are subject to continuing review and change by the West Virginia Higher Education Policy Commission, the WVU Board of Governors, University administrators, and the faculties of the schools and colleges. The University, therefore, reserves the right to change, delete, supplement, or otherwise amend the information, course offerings, requirements, rules, and policies contained herein without prior notice. The indicia depicted are registered trademarks of West Virginia University. Copyright © West Virginia University, 2003.

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West Virginia University Calendar

2003-2004*

Fall Semester 2003

Wednesday, Thursday, Friday, August 13, 14, 15	New Student Orientation
Friday, August 15	General Registration
Monday, August 18	First Day of Classes
Monday, August 18	Late Registration Begins
Friday, August 22	Last Day to Add Courses and Make Changes
Monday, September 1	RECESS—Labor Day
Friday, September 26	Day of Special Concern (Rosh Hashanah)
Friday, October 3	Mid-Semester
Monday, October 6	Day of Special Concern (Yom Kippur)
Tuesday, October 7	Mid-Semester Reports Due
Friday, October 24	Last Day to Drop a Class
Saturday, November 22, through Sunday, November 30	RECESS—Thanksgiving Break
Thursday, December 4	Last Day to Withdraw
Friday, December 5	Last Day of Classes
Friday, December 5	December Convocation
Monday, December 8, through Saturday, December 13	Final Exams
Monday, December 29	Degree Conferring Date

Spring Semester 2004

Wednesday, Thursday, Friday, January 7, 8, 9	New Student Orientation
Friday, January 9	General Registration
Monday, January 12	First Day of Classes
Monday, January 12	Late Registration Begins
Friday, January 16	Last Day to Add Courses and Make Changes
Monday, January 19	RECESS—Martin Luther King Day
Saturday, February 7	West Virginia University Day
Friday, February 27	Mid-Semester
Tuesday, March 2	Mid-Semester Reports Due
Saturday, March 13 through Sunday, March 21	RECESS—Spring Break
Friday, March 26	Last Day to Drop a Class
Tuesday, April 6	Day of Special Concern (Passover)
Friday, April 9	Holiday of Special Concern (Easter)
Thursday, April 29	Last Day to Withdraw
Friday, April 30	Last Day of Classes
Monday, May 3	Final Exams
Monday, May 10	Grade Reports for all Graduates Due in Dean's Office
Tuesday. May 11	RECESS—Election Day
Wednesday, May 12	Dean's Reports on Graduates Due in ARC
Saturday, May 15	Alumni Day
Sunday, May 16	Commencement

Summer Session I 2004

Thursday, May 20	Registration
Thursday, May 20	First Day of Classes
Friday, May 21	Late Registration Begins
Tuesday, May 25	Last Day to Add Courses and Make Changes
Monday, May 31	RECESS—Memorial Day
Tuesday, June 15	Last Day to Drop
Monday, June 28	Last Day to Withdraw
Tuesday, June 29	Last Day of Classes
Tuesday, June 29	Final Exams

Summer Session II 2004

Thursday, July 1	Registration
Thursday, July 1	First Day of Classes
Friday, July 2	Late Registration Begins
Sunday, July 4	RECESS—Independence Day
Wednesday, July 7	Last Day to Add Courses and Make Changes
Tuesday, July 27	Last Day to Drop
Monday, August 9	Last Day to Withdraw
Tuesday, August 10	Last Day of Classes
Tuesday, August 10	Final Exams
Friday, August 20	Degree Conferring Date (No Ceremonies)

***See www.wvu.edu/~calendar for the 2004-2005 calendar.**

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West Virginia Higher Education Governance*

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*Corrected as of February 15, 2003.

West Virginia University is governed by the West Virginia Higher Education Policy Commission and the WVU Board of Governors.

West Virginia University is a member of the North Central Association of Colleges and Schools. The University's educational programs are accredited by the North Central Association and by the appropriate accreditation agencies for professional programs.

West Virginia University is an Equal Opportunity/Affirmative Action Institution. The University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color, or national origin in the administration of any of its educational programs or activities, or with respect to admission or employment. Further, faculty, staff, students, and applicants are protected from retaliation for filing complaints or assisting in an investigation under the University's Equal Opportunity/Affirmative action Plan. Inquiries regarding the University's non-discrimination policy may be sent to the director, Affirmative Action Office/Equal Employment Opportunity Programs, West Virginia University.—Office of the President.

Frequently Contacted Offices

Academic Programs
Provost and Vice President for Academic Affairs and Research
West Virginia University
P.O. Box 6203
Morgantown, WV 26506-6203
Phone: (304) 293-2661 Fax: (304) 293-7554
www.wvu.edu/~acadaff/acad_prog_info.htm

Admissions and Records, Catalogs
West Virginia University
P.O. Box 6009
Morgantown, WV 26506-6009
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www.wvu.edu/prospective

Graduate Programs
Office of Graduate Education
West Virginia University
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www.wvu.edu/~graduate

Housing and Residence Life
Director, Housing and Residence Life
West Virginia University
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Morgantown, WV 26506-6430
Phone: (304) 293-4491 Fax: (304) 293-4825
www.wvu.edu/prospective

Scholarships, Work-Study, and Veterans Educational Assistance
Student Financial Aid Office
West Virginia University
P.O. Box 6004
Morgantown, WV 26506-6004
Phone: (304) 293-5242 Fax: (304) 293-4890
www.wvu.edu/prospective

Student Life
Dean, Student Life
West Virginia University
P.O. Box 6411
Morgantown, WV 26506-6411
Phone: (304) 293-5611 Fax: (304) 293-7028
www.wvu.edu/~studlife

West Virginia University Administration

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Charles T. Holland Professor of Mining Engineering, Syd S. Peng
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Eberly College of Arts and Sciences Centennial Professor of Geology, Thomas Kammer
Eberly College of Arts and Sciences Centennial Professor of Psychology, Kennon Lattal
Eberly Family Distinguished Professor of Clinical Psychology, Barry A. Edelstein
Eberly Family Distinguished Professor of History, Robert E. Blobaum
Eberly Family Professor of Applied Mathematics, Yuesheng Xu
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Woodrow A. Potesta Professor of Law, Charles R. DiSalvo

General Information

Established in 1867, West Virginia University is the state's only research, doctoral degree-granting, land-grant university. WVU provides high-quality programs of instruction, offering 168 degree programs at the undergraduate, graduate, and first-professional levels, including the state's only law school. WVU fosters basic and applied research and scholarship and engages in and encourages other creative and artistic work. A wide range of health science programs are taught at the WVU Robert C. Byrd Health Sciences Center through schools of medicine, dentistry, nursing, and pharmacy, including allied health programs and graduate programs in basic health sciences.

WVU combines the breadth of academic opportunities offered by a major research institution with the atmosphere of a small school. The undergraduate student/faculty ratio is approximately 19:1. Enrollment in one of the University's 13 colleges and schools offers students the warmth and friendliness of a small academic community. The University encourages diversity and promotes social justice in all of its activities.

The downtown campus is linked to the Evansdale campus and the Robert C. Byrd Health Sciences Center by the Personal Rapid Transit (PRT) system, which uses automated, electric-powered cars that operate on a concrete-and-steel guideway. The PRT permits quick and easy access to major locations within the University and downtown Morgantown.

The diversity of our student body is evident in the Fall 2002 enrollment of 23,492 students, with all 55 counties of West Virginia, 50 states, and 93 other countries represented. WVU has produced 25 Rhodes Scholars, 15 Truman Scholars, 22 Goldwater Scholars, and two British Marshall Scholars.

Only ten other state universities share WVU's complex mission as a land-grant, research-oriented, public university with a comprehensive health sciences center. The term "land-grant" derives from the Congressional act of 1862 that gave federally owned land to each state, to be sold for funds to establish colleges offering programs in agriculture and engineering. Since its founding in 1867, WVU has developed into the center of graduate and professional education, research, and extension programs in West Virginia.

WVU campuses combine traditional and modern architectural styles; nine full buildings, a portion of White Hall on the downtown campus, and two buildings at Coopers Rock are listed on the National Register of Historic Places. Many of these original buildings, including Stalnaker Hall, have been restored and renovated.

The University library system consists of several facilities containing 1.7 million books and two million microforms and microfilms. Over 9,000 periodicals are received. The collections are especially strong in the biological sciences, chemistry, engineering, economics, Africana, the Southern Appalachians, and West Virginia history. A new Downtown Campus Library opened in spring 2002, which alone holds 345,000 books, a multimedia floor that houses government documents, electronic classrooms, 180 computers, 35 media-equipped workstations, and 32 wireless laptops.

WVU programs and services are accessible throughout West Virginia. Regional campuses include West Virginia University at Parkersburg, Potomac State College of West Virginia University, and West Virginia University Institute of Technology. WVU operates the Charleston Division of the Robert C. Byrd Health Sciences Center and the Wheeling Division of the School of Medicine. In addition, there are six Extended Learning Regional Centers at Charleston, Clarksburg, Parkersburg, Morgantown, Shepherdstown, and Wheeling.

WVU operates eight experimental farms in Hardy, Jefferson, Monongalia, Monroe, and Preston counties; five experimental forests in Monongalia, Preston, Randolph, and Wetzel counties; a geology camp in Greenbrier County; and the state 4-H Camp and a museum of mid-19th century life at Jackson's Mill.

The Mission of West Virginia University

Founded in 1867, West Virginia University is the land-grant, doctoral degree-granting research university in the state of West Virginia. As such, the institution occupies a unique position within the state.

West Virginia University's primary mission is to provide high-quality programs of instruction at the undergraduate, graduate, and professional levels; to stimulate and foster both basic and applied research and scholarship; to engage in and encourage other creative and artistic work; and to bring the resources of the University to all segments of society through continuing education, extension, and public service activities.

Opportunities to conduct pioneering research and scholarship help attract high quality faculty and students. Students and faculty work together to create exciting and productive paths for investigation and development. WVU nurtures these symbiotic interactions to build intellectual, social, and economic development for all of West Virginia.

WVU's special responsibility is to seek out, challenge, educate, and help create opportunities for those West Virginia citizens who can benefit from its programs, especially those who have demonstrated high achievement or who possess excellent potential.

West Virginia University recognizes that diversity enriches the institution and the society it serves. The University is committed to social justice and to practicing the principles of equality of opportunity and affirmative action.

The Range of University Activity

Currently, WVU, including the regional campuses of Potomac State College of WVU, WVU at Parkersburg, and WVU Institute of Technology, enrolls approximately 30,638 students. WVU has an annual budget in excess of $265 million.

Instruction

Degrees are awarded at the baccalaureate, master's, doctoral, and professional levels. The University offers 169 degree programs through the departments/divisions of 13 colleges and schools:

- The Davis College of Agriculture, Forestry, and Consumer Sciences including the Divisions of Animal and Veterinary Sciences, Family and Consumer Sciences, Forestry, Plant and Soil Sciences, and Resource Management.
- The College of Business and Economics, including the Divisions of Accounting, Business Administration, and Economics and Finance.
- The College of Creative Arts, including the Divisions of Art, Music, and Theatre and Dance.
- The College of Engineering and Mineral Resources, including the Departments of Chemical Engineering, Civil and Environmental Engineering, Computer Science and Electrical Engineering, Industrial and Management Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, and Petroleum and Natural Gas Engineering.
- The College of Human Resources and Education, including the Departments of Advanced Educational Studies; Counseling, Rehabilitation Counseling, and Counseling Psychology; Educational Theory and Practice; and Speech Pathology and Audiology.
- The College of Law.
- The Eberly College of Arts and Sciences, including the School of Applied Social Sciences (Public Administration, Social Work, and Sociology and Anthropology); the Departments of Biology, Chemistry, Communication Studies, English, Foreign Languages, Geology and Geography, History, Mathematics, Philosophy, Physics, Political Science, Psychology, Religious Studies, and Statistics; and programs in Africana Studies, Biochemistry, Environmental Geoscience, Forensic and Investigative Science, Industrial Mathematics and Statistics, International Studies, Liberal Arts and Sciences, Native American Studies, Slavic Studies, and Women's Studies.
- The Perley Isaac Reed School of Journalism, including sequences in Broadcast News, News-Editorial, and Public Relations.
- The School of Dentistry, including the Departments of Dental Hygiene, Endodontics, and Orthodontics.

- The School of Medicine, including the Departments of Anesthesiology, Behavioral Medicine and Psychiatry, Biochemistry and Molecular Pharmacology, Community Medicine, Emergency Medicine, Exercise Physiology, Family Medicine, Human Performance and Applied Exercise Science, Medicine, Microbiology, Immunology, and Cell Biology, Neurobiology and Anatomy, Neurology, Neurosurgery, Obstetrics and Gynecology, Occupational Therapy, Ophthalmology, Orthopedics, Otolaryngology Head and Neck Surgery, Pathology, Pediatrics, Physiology and Pharmacology, Radiology, Surgery, and Urology, the HSC branch campus at Charleston, and the division at Wheeling.
- The School of Nursing.
- The School of Pharmacy.
- The School of Physical Education.

The University conducts graduate studies in Morgantown and at five off-campus centers and continues to develop telecommunication resources to expand its off-campus graduate instruction.

Research and Scholarship

Research, scholarship, or creative activity of distinction is expected within every school or college of the University. Indeed, most of the advanced research and scholarship carried out in West Virginia finds its home at West Virginia University. The assessment of the quality both of research and teaching is given heavy weight in tenure, promotion, and other personnel decisions affecting faculty members.

The University supports and is supported by numerous institutes for the promotion of interdisciplinary studies and research. These units include the National Research Center for Coal and Energy, the Regional Research Institute, the Mary Babb Randolph Cancer Center, the Center on Aging, the Institute for Public Affairs, the Center for Women's Studies, the Bureau of Business and Economic Research, the Harley O. Staggers National Transportation Center, the West Virginia Water Research Institute, the Appalachian Hardwood Center, the Concurrent Engineering Research Center, the Institute of Occupational and Environmental Health, and others.

Service

By virtue of its service mission as a land-grant institution and its position as the major center of research and development in West Virginia, the University has a responsibility to work with business and government leaders to promote the economic development of West Virginia. Through credit and non-credit educational programs and working partnerships with industry, government, and public schools, the University plays an important role in all geographic regions in West Virginia.

WVU contributes to the development and enhancement of West Virginia's economic, educational, social, and health status through its programs of instruction and research and through its programs of outreach. To serve the State and its people, the University offers instructional and service programs in every county through the West Virginia University Extension Service. Additionally, the West Virginia University Agricultural and Forestry Experiment Station sponsors applied and basic research throughout West Virginia, directly benefiting industries critical to the state. The West Virginia University Health Sciences Center (HSC) serves the people of all 55 counties of West Virginia through direct patient care both at its campuses and at outreach clinics located throughout the state. The HSC maintains a cancer information service, a drug information service, and a poison control center. It provides extensive support services for rural physicians, including a free telephone consultation program, specialty care support, monthly educational opportunities, and computerized access to resources in the Health Sciences Center Library. The health professionals of the HSC conduct basic research focusing on the specific needs of West Virginians.

Potomac State College of West Virginia University

Potomac State College of West Virginia University, situated in West Virginia's Eastern Panhandle in the town of Keyser, provides students with liberal arts and sciences and pre-professional studies in agriculture, business and economics, criminal justice studies, education, engineering, forestry, journalism, medical technology, music, nursing, pharmacy, physical therapy, social work, and veterinary medicine. Career-technical programs at Potomac State, which lead to an associate in applied science degree, include: agriculture and horticulture; business technology including general business, accounting, and marketing; child care; computer information systems including microcomputer applications, programming, Internet, and network specialists; law enforcement and corrections; electronics technology; occupational development; executive and medical secretarial; and technical studies. A certificate is offered in criminal justice studies. As a residential campus of WVU, Potomac State College program offerings transfer to university/college parallel programs or provide immediate access to a variety of careers. Celebrating its Centennial in 2001, the college serves as the cultural hub and educational leader of the five-county Potomac Highlands Region and attracts students from across the state, the nation, and the world. Phone: 1-800-262-7332; on-line: www.potomacstatecollege.edu.

West Virginia University Institute of Technology

The West Virginia University Institute of Technology is WVU's southernmost regional campus. Located in Montgomery, WVU Tech serves the region and the state by preparing students at the associate's, baccalaureate, and master's levels for careers in the basic and applied sciences (e.g., engineering, business, technology, and the health, life, and physical sciences). WVU Tech serves as the sole preparer of vocational-technical teachers in the state, and prepares students through the community college division for technically oriented occupations. It not only provides for community education needs in the region, but also addresses the statewide and regional needs for delivery of engineering and technical programs through extension offerings, continuing education, and consultative activities of the faculty. WVU Tech currently offers certificates and associate's degrees in 15 fields, baccalaureate degrees in 26 fields, and a master's degree in engineering. WVU in Morgantown and WVU Tech, along with the other regional campuses, are working together to use technology to expand offerings available to students in the southern part of the state. Phone: 1-888-554-TECH; on-line: www.wvutech.edu.

West Virginia University at Parkersburg

As a regional higher education center for a seven-county service area in West Virginia's Mid-Ohio Valley, West Virginia University at Parkersburg delivers community-based educational programs that meet the broad educational goals of area residents. Established in 1961, WVU Parkersburg offers programs in development studies, general education, and specialized and technical training. Its offerings consist of a blend of one- and two-year career and academic programs and selected baccalaureates. Career programs include certificates in industrial maintenance, surgical technology, technical studies, and welding. Associate in applied science degrees are available in business technology, computer and information technology, criminal justice, engineering technology, environmental technology, industrial maintenance, journalism, manufacturing processes, nursing, occupational development, paramedic science, technical studies, welding management technician, and welding skills technology. Transfer programs include the associate in arts and the associate in science degrees in business administration, computer science, data processing, engineering, and pre-professional sciences. WVU Parkersburg also offers a bachelor of science degree in business administration and a bachelor of arts in elementary education. Many of WVU Parkersburg's program offerings transfer easily to university/college parallel programs. Phone: 1-800-WVA-WVUP; on-line: www.wvup.edu; e-mail: wvupinfo@wvup.wvnet.edu.

Commitment to Social Justice

West Virginia University's role as the doctoral degree-granting, research, land-grant university in the state of West Virginia gives the institution a special responsibility as a leader in the area of social justice. The pursuit of truth underlying the University's mission focuses attention on issues of diversity, power, and perspective, so that students, faculty, and staff may study and work in a climate of academic freedom and social responsibility, developing the skills, knowledge, and self-esteem necessary for participation as world citizens.

Equal opportunity is a fundamental goal in a democratic society, and WVU shares the responsibility for achieving that equity. The institution is committed, therefore, to ensuring that all persons, including women; people of color; persons with disabilities; gays, lesbians, and bisexuals; veterans; and persons of different religions, sexual orientation, ages, and international, ethnic, and economic backgrounds benefit from the many opportunities the institution provides.

In keeping with this responsibility, the members of the academic community are expected to demonstrate civility and mutual respect for all persons; understanding and appreciation for all persons; to express that perspective in every dimension of the institution's life and mission; and to work cooperatively, representing not only the interests of their own groups but also those of the wider community.

The importance of WVU's social justice program goes beyond the benefits that accrue to any one person or group, to the strengthening of the University itself and the enhancing of its ability to accomplish the mission with which it has been entrusted by the people and the State of West Virginia.

Government and Organization of WVU

Effective July 1, 2001, the West Virginia Board of Governors is vested by law with the authority for the control and management of the University. The board includes twelve lay members, one faculty member, and one student member. The University president, appointed by the Board of Governors, is the chief executive officer of the University.

The West Virginia Higher Education Policy Commission is responsible for policy development and other statewide issues. The commission consists of seven members appointed by the governor, the secretary of education and the arts, and the state superintendent of schools.

The Faculty Senate is the vehicle for faculty participation in the governance of the University. It is a legislative body with original jurisdiction over all matters of academic interest and educational policy that concern the entire University or affect more than one college or school. The senate's decisions are subject to review and approval by the president and the Board of Governors. Senators are elected by members of the University faculty to represent their colleges and other constituencies. Each senator represents twenty members of the University faculty. The senate is presided over by an elected chair.

Three faculty members serve on the Vice Presidents' Advisory Committee for Promotion and Tenure. The president meets regularly with the cabinet and monthly with the Faculty Senate Executive Committee, the Staff Council, and Student Administration. The University Faculty Assembly includes the president as presiding officer, professors, associate professors, assistant professors, instructors holding appointments on a full-time basis, and other persons engaged in full-time professional activities. The assembly meets once a year.

West Virginia University has a tradition of strong student administration that represents student opinion to the administration and faculty. Student administration has three main units: the executive branch, the board of governors, and the judicial board. Students also serve on University-wide committees and on the Mountainlair Advisory Council.

The Staff Council is an advisory council to the president of the University and a means for all classified employees to express their opinions about job conditions, fringe benefits, employee relations, or other areas that affect their jobs.

Local 814 of the Laborers' International Union of North America, AFL-CIO, represents employees throughout the University and its affiliates. These employees are in craft/maintenance, service, clerical, and technical job categories, with a wide variety of job classification. Laborer's Local 814 is the only recognized union at the University by agreement through the Memorandum of Accord.

Morgantown Area

Greater Morgantown has 27,000 permanent residents; Monongalia County, 79,000. WVU is the largest single employer in the county. On the east bank of the Monongahela River, which flows north to Pittsburgh, Morgantown is situated on rugged terrain in the Appalachian highlands. The altitude varies from 960 feet above sea level in Morgantown to 2,100 feet at nearby Cooper's Rock. The area's temperate climate has four distinct seasons of about equal length. Morgantown averages forty inches of precipitation a year. Autumn is beautiful when the leaves turn red, orange, and yellow. A north-south interstate highway (I-79) is one mile west of Morgantown. U.S. 19 and U.S. 119 pass through Morgantown in a north-south direction. Interstate 68, an east-west highway, links I-79 at Morgantown to I-81 in the Cumberland/Hagerstown, Maryland, region.

Because of WVU's resources, the Morgantown area is a major research center in the Appalachian region. Five federal agencies have research facilities in the area: Department of Health and Human Services (Appalachian Laboratory for Occupational Safety and Health), Forest Service (Forestry Sciences Laboratory), National Energy Technology Laboratory of the Department of Energy, Natural Resource Conservation Service (West Virginia headquarters), and the National Institute for Occupational Safety and Health.

Housing and Residential Education

The University owns and operates nine residence halls with a capacity of approximately 3,500. All single, first-year students (including transfer students with freshman class status) are required to live in University housing. Exceptions include students living at home with parents within commuting distance, students age 21 or older, married students, and students with children. The Assignments Office, G-140 Lyon Tower, (304) 293-2811, provides information about on-campus, undergraduate housing. The Department of Housing also operates apartment complexes. Although primarily for graduate students, the Medical Center Apartments accommodate juniors, seniors, and students age 21 or older, based on availability. Information about University-owned apartments is available by calling (304) 293-5840. On-line: at www.sa.wvu.edu/housing.

Office of Information Technology

The Office WVU of Information Technology (OIT) provides support for academic and research computing, and instructional technology, throughout West Virginia University. This support includes, but is not limited to, training, technical consulting, research support, and planning in the academic applications of information technology. OIT operates computer labs on the downtown and Evansdale campuses. These labs provide students, faculty, and staff access to computing resources including word processing, spreadsheet, database, and graphics software, e-mail, and the Internet. They also provide access to selected instructional software programs for specific courses. Additionally, OIT supports the application and integration of technology into the instructional program of the University. This support includes technical assistance regarding classroom technology, the development of computer-based instructional materials and systems, the Instructional Technology Resource Center, and the operation of a multimedia distribution system. Call (304) 293-2444 ext. 1 or e-mail: oithelp@mail.wvu.edu for more information about OIT services and programs.

Admission

WVU provides excellent educational programs for well-prepared students. The goal of the University's admission policy is to select applicants who will succeed academically and socially. If space is limited, the best-prepared students are admitted.

WVU enrolls a diverse student population. While preference is given to West Virginia residents, qualified students from other states and countries are encouraged to apply. The University is committed to the goal of equal educational opportunity for all students; no candidate is denied admission because of race, creed, color, sex, sexual orientation, marital status, age, handicap or disability, veteran status, or national origin.

The primary emphasis in admissions is academic promise. All of the required materials submitted by the applicant—application, transcripts, and test results—are reviewed carefully.

You may receive an application for admission at many local high schools, access it on-line at www.wvu.edu/prospective, or you may write to: Office of Admissions and Records, P.O. Box 6009, Morgantown, WV 26506-6009. Telephone (304) 293-2121; e-mail: go2wvu@wvu.edu.

Some colleges and programs have admission standards that exceed the minimal requirements. For example, pre-computer science in the Eberly College of Arts and Sciences requires two units of algebra, one unit of geometry, and one-half unit of trigonometry for a total of three and one-half units of mathematics. Upper-division admission to the College of Business and Economics, Division of Physical Therapy, and School of Pharmacy, among others, is competitive, and preference is given to West Virginia residents. Admission to the University does not ensure admission into a specific school or college.

Freshman Admissions

Complete the application and mail it to WVU at the address above. You must also submit an official high school transcript and proof of measles and rubella immunization. When you graduate, request your counselor to send your final high school transcript verifying graduation to the Office of Admissions and Records.

General Credit Requirements

The following high school credits must be completed for freshman admission:

Required Units

Units (Years)

- 4 English (including courses in grammar, composition, and literature)
- 3 Social studies (including U.S. history)
- 3 College preparatory mathematics (algebra I, algebra II, and plane geometry)
- 3 Science (two of the three units must be laboratory science. At least two units from coordinated and thematic science 10, biology, chemistry, physics, and other courses with a strong laboratory science orientation

It is strongly recommended that you complete a minimum of two consecutive units of a foreign language.

Elective Units

Areas such as computer science, fine arts, humanities, and keyboarding are recommended.

Grade Averages and Test Scores

Your high school grade point average and your comprehensive tests are the major factors used to determine your admission to WVU. We accept either ACT (American College Testing) or SAT (Scholastic Aptitude Test) scores.

As a high school graduate from West Virginia, you are eligible for admission if you have a 2.0 grade point average and either a composite ACT score of 19 or a total SAT score of 910. If you are a non-resident, you are eligible for admission if you have a 2.25 overall grade point average and either an ACT composite score of 20 or a total SAT score of 950. If space is available and you have the required high school units, the GPA, and the test scores, you

will be admitted. Therefore, we encourage eligible students to apply as soon as possible after September 15 of the senior year. If you do not meet one of the requirements, you may still apply and the admissions review committee will review your application. Please submit a written statement telling of any extenuating circumstances. You may be assured that each application is reviewed individually and given full consideration.

GED

If you have completed a General Equivalency Degree (GED) with a minimum score of 45, request that the State Department of Education mail copies of your scores to the Office of Admissions. Request that the high school you last attended send a copy of your transcript to WVU, listing the coursework you completed.

If you would have graduated less than five years before your admission request, you must present ACT or SAT scores with your application. If it is more than five years since your class graduated from high school or you earned your GED diploma, and you have not attended another college, we may waive some of the admission requirements.

ACCESS (Attaining College Credits and Experiences while in Secondary School)

Academically talented high school students who have completed their junior year with a 3.0 GPA may be admitted to take college courses before high school graduation. An access application for admission must be submitted along with the high school transcript and a letter of permission from the parent(s) or guardian(s) and the high school counselor or principal. Coursework completed at the University must be at a level beyond that available in the high school setting.

Early Admission

WVU will select a limited number of high school seniors who are academically high achievers and socially prepared to enter college before high school graduation. If you have completed your junior year in high school with at least a GPA of 3.5 and a 26 enhanced ACT composite or 1170 on the SAT, you may apply. You must also have completed all requirements for graduation from high school except senior English.

You will be asked to submit an admission application in addition to academic records required for freshmen as described in the "Freshman Admissions" section of this catalog. You must have your principal or guidance counselor submit a letter supporting your application. Your parent(s) or guardian must also submit a letter of support for your application.

After the above requirements are met, you will be interviewed for the Early Admissions Program. Accepted students are admitted as full-time students with all of the rights and privileges offered other students.

Veterans

Veterans not meeting minimal admission requirements may be reviewed for admission by the Admissions Review Committee. If you want information about the various forms of aid for veterans, contact a financial aid counselor at the Student Financial Aid Office or write to: Financial Aid Office, 2nd floor Mountainlair, P.O. Box 6004, Morgantown, WV 26506-6004; phone: (304) 293-5242; e-mail: finaid@wvu.edu.

Aid to dependents of totally disabled veterans is also available.

If you have at least one year of active military service, you may get credit for physical education courses and for military science under our advanced placement program.

Health Sciences Center

The Admissions and Records Office at the WVU Health Sciences Center is responsible for admission to the dentistry, medicine, nursing, and pharmacy schools. The *WVU Health Sciences Center Catalog* contains complete information about these programs. If you have additional questions, you may write to: Admissions and Records, 1170 Health Sciences Center North, P.O. Box 9815, Morgantown, WV 26506-9815; phone: (304) 293-3521.

If you are an applicant for freshman admission (except for dental hygiene) you should use the regular application and apply for pre-health sciences programs. Dental hygiene applicants apply directly to HSC. To receive an application, please call or write to the address above.

Transfer Students: Intra-University

If you are a student at Potomac State College of WVU, WVU at Parkersburg, or WVU Institute of Technology, you may transfer to the Morgantown campus if you meet admission requirements. You must also meet the requirements of the program that you wish to enter.

If you want to transfer to WVU at Morgantown before completing two semesters at any of our regional or branch campuses, you will need to have been eligible for freshman admission.

Transfers from Other Accredited Institutions

We welcome you as a transfer student if you have completed post-secondary studies at an accredited college or institution. All colleges must be accredited by the North Central Association of Colleges and Schools or by other regional accrediting associations accepted by WVU. To be eligible to enroll as a transfer student at the University, you must have at least a 2.0 grade point average in all college work attempted. In addition, if you have fewer than 12 transferable credit hours, you must also meet freshman admission standards. Some individual programs have differing course requirements and higher grade point average requirements than those stated here.

To be considered for transfer admissions, submit a completed application for undergraduate admission and arrange for an official transcript of all college work attempted to be sent to the Office of Admissions and Records. Admissions and Records can only accept transcripts sent directly from registrars' offices. Transcripts issued to you, or a facsimile (fax) transcript, are not considered official. Before final admission is granted, you must submit an official transcript covering all subjects taken after your application to WVU. If you have fewer than 29 transferable credit hours, you will be ranked as a freshman; you must submit ACT or SAT scores and a high school transcript as part of your application. We evaluate transferable credit after receipt of complete official transcripts and admission to WVU. All application material must be received in the Office of Admissions and Records by **August 1** for fall admission and **December 1** for spring admission.

If you are transferring more than 58 semester hours, you must meet the entrance requirements for the specific program you wish to enter. Individual consideration is given to a limited number of students with more than 58 transferable hours who do not meet specific program requirements.

Credits and grades for college-level courses completed at any institution in the West Virginia state system of higher education may be transferable toward a bachelor's degree. For institutions outside the West Virginia system, only credits, not grades, are transferable for college-level courses passed with a grade of D or higher.

In all cases, the application of transfer credit toward completion of a bachelor's degree is determined by the school or college upon enrollment.

Transfer credits from two-year community colleges and junior colleges outside the West Virginia Regional Campus System are limited to 72 hours of lower-division courses.

International Student Admission

West Virginia University is authorized under federal law to enroll non-immigrant foreign nationals as students. International students wishing to enroll as undergraduate students at WVU must comply with the stated academic requirements for admission and with certain additional academic and non-academic requirements.

April 1 is the application deadline for the fall semester. International students applying for admission to WVU must submit the following:

- Completed International Student Admission Application.
- Application service fee.

- Results of the Test of English as a Foreign Language (TOEFL) or International English Language Testing Service (IELTS). TOEFL results must be sent to WVU directly from the Educational Testing Service (ETS) and the IELTS results must be sent directly from the University of Cambridge Local Examinations Syndicate.
- Original or certified copies of an official academic record in original language of issue.
- Original or certified copy of all certificates or diplomas in original language of issue.
- Official English translations of academic record and certificates/diplomas.

International applicants who have completed high school in the United States may also be required to submit ACT or SAT results.

The above items should be sent to Admissions and Records, West Virginia University, P.O. Box 6009, Morgantown, WV 26506-6009 and must be received by the application deadline. If possible, all application material should be submitted at one time (TOEFL/IELTS scores and official transcripts from United States institutions should be requested so that all material arrives at WVU close to the same date). Incomplete applications can not be guaranteed consideration for the desired semester.

Required Academic Credentials

Applicants must submit academic records from all secondary and post-secondary institutions attended regardless of whether grades were issued or credit was received. WVU requires that original or certified copies of the original academic documents from non-United States institutions be submitted. The required documents include the official academic record (showing course titles, dates taken, and grades received), and diploma(s) or certificate(s) showing degree awarded. These documents must be in the *original language of issue*. Official English translations must be included. Translations must be literal, word-for-word translations, and must indicate actual grades received, not an interpretation of the grades. Applicants who have studied in the United States are required to have the institution(s) in the U.S. send the official transcript directly to WVU.

Documents received by WVU become the property of WVU and cannot be returned to the applicant or copied for the applicant. It is therefore recommended that students who receive only one original copy of credentials submit certified copies with the application.

English Language Proficiency

All applicants whose first language is not English must provide proof of English language proficiency. WVU uses the Test of English as a Foreign Language (TOEFL) or the International English Language Testing Service (IELTS) as the measure of English language proficiency. A score of 173 on the computer-based TOEFL or 500 on the paper-based TOEFL or 6.0 on the IELTS is the minimum required. Applicants should make arrangements to take the TOEFL well in advance of the desired date of enrollment at WVU. Information about registration for the TOEFL can be obtained by writing to: TOEFL/TSE Services, P.O. Box 6151, Princeton, NJ 08541-6151, USA, or by contacting the local office of the United States Information Service (USIS). Information about registration for IELTS can be obtained by accessing the IETLS web site at www.ielts.org.

Applicants who have received a high school diploma or a bachelor's degree in the United States need not submit TOEFL results.

In some cases, it may be possible to consider applications from students who lack adequate TOEFL or IETLS scores and who will enroll in WVU's Intensive English Program. Such applicants must contact the Intensive English Program directly and notify the Office of Admissions and Records of their intentions. *Admission to the Intensive English Program does not guarantee admission to the University or to a specific program of study.* Inquiries should be directed to: Intensive English Program, WVU Department of Foreign Languages, P.O. Box 6297, Morgantown, WV 26506-6298; phone: (304) 293-3604; on-line: www.as.wvu.edu/forlang.

Financial Documents and Student Visa

International students requiring a form I-20 or IAP-66 for student or exchange visa must provide certification of adequate financial resources. Generally, the student is required to provide an official bank statement showing the availability of the appropriate funds. If a private sponsor will be the student's source of support, the sponsor must submit a letter showing intent to sponsor and an official bank statement showing the availability of the appropriate funds. Other forms of support could include sponsorship certifications from the student's government or sponsoring agency. In all cases, original or certified copies of financial/sponsorship documents must be submitted before the I-20 or IAP-66 can be issued.

Study Abroad at WVU (Office of International Programs)

West Virginia University strongly encourages students to take part in a study abroad program as part of their undergraduate educational experience. WVU considers an international experience an integral part of preparing all students to enter the workforce as well as to enhance one's academic career. Students who participate in an overseas experience often increase their self-reliance, motivation, and focus in their academic and life goals.

The Office of International Programs offers students a variety of both WVU and non-WVU programs from which they may choose. Students may go abroad for varying lengths of time, ranging from ten days over a holiday break or several semesters, depending on which program the student chooses to participate. In order to transfer credit back to WVU, a D grade or higher (or the host institution's equivalent) is required. Credit is counted toward graduation, but grades are not transferred and do not affect the GPA.

Students have several options for programs. The Office of International Programs in Stansbury Hall advises students on finding the right program for their academic and personal needs, offers study abroad seminars to provide essential background information on study abroad, pre-departure orientations to inform students of what they will need to know and do in order to go abroad, travel and cultural information, access to resources to assist with going abroad, as well as to answer questions about other international opportunities such as international internship and work abroad programs.

Exchange Programs

WVU has agreements with "sister institutions" around the world that allow students the opportunity to study as exchange students in another country. Students pay regular WVU tuition and fees, and in some cases, room and board, as well. Students are then able to immerse themselves into the local culture and experience living and studying in a foreign country for a significant amount of time. Exchange programs are available for students who do not have foreign language skills and for those who do, depending on the program. Currently, WVU has exchange programs at: Australian Catholic University, Australia; Royal Melbourne Institute of Technology, Australia; Bodenkulture University (BOKU), Austria; Zhejiang University, China; Aalborg University, Denmark; University of Hertfordshire, England; Grenoble II, University Pierre Mendez France, France*; Otto-Friedrich-Universitat, Germany*; Lingnan University, Hong Kong; Dublin City University, Ireland; Aichi Shukutoku, Japan*; Kansai Gaidai, Japan*; Kinjo Gakuin, Japan*; University of Guanajuato, Mexico*; Al Akhawayn University, Morocco; University of Ulster, Northern Ireland; Stellenbosch University, South Africa; Linkoping University, Sweden; University of West Indies, Trinidad and Tobago; Bogazici University, Turkey; University of Wales at Cardiff, Wales

*Requires some foreign language ability.

Faculty-Led Programs

A variety of short-term programs during spring, summer, fall, and winter breaks are also available for students. These accredited programs are generally all-inclusive, are led by a WVU-faculty member, and are considered "island" programs whereby the students travel in a group and do not immerse themselves into the culture to the extent that a regular exchange student would. Most programs are in English with the exception of those summer programs that specifically indicate a foreign language component. Because these programs are updated every year, please contact the Office of International Programs or visit the OIP web site for the most current roster of faculty-led programs.

Other Options

Students may also choose to participate in a non-WVU program. WVU has affiliations with other universities, accredited third party institutions and international organizations that offer comprehensive study abroad and internship programs not available at WVU. However, these programs must be approved for transient credit by the Office of Admissions and Records and the student's academic department and college as well as the Office of International Programs.

Contact Information

For more information, contact the Office of International Programs at (304) 293-6955, visit their web site at www.wvu.edu/~intlprog, or e-mail at oip@mail.wvu.edu.

Other Admission Categories

Transient/Visiting Students Coming to WVU

If you want to take a course at WVU and have the credit transferred to another college or university, you will need an official statement of good standing indicating an overall grade point average of 2.0 or an official transcript from the last college attended. In addition, you must complete an undergraduate application.

Readmission

If you leave the University for at least one complete semester, you are required to submit an application for readmission to the Office of Admissions and Records. Decisions on readmission are based on your WVU academic standing along with academic work earned at any other institution attended after leaving WVU. In order to be readmitted, you must obtain an overall grade point average of 2.0 at all institutions attended since leaving WVU or present an overall grade point average of 2.0 between your WVU work and your work from all institutions attended since leaving WVU.

If you are transferring credit from institutions outside the West Virginia System of Higher Education, WVU will accept credit only for courses in which you earned a grade of D* or higher, provided the other conditions have been met.

If you have been suspended from the University, you must be reinstated by the dean of the school or college to which you wish to be admitted before you apply for readmission.

If you have been suspended for academic reasons or have less than a 2.0 overall grade point average when you leave WVU and you take courses at other institutions during your suspension, you cannot automatically transfer these courses to WVU upon readmission. You must achieve an overall GPA of 2.0 on a semester of at least 12 hours (summer sessions excluded) after your readmission in order to have the appropriate credit entered on your record. The dean of your college or school and your advisor must certify that these conditions have been met.

Undergraduate Non-Degree

Students with one or more bachelor's degrees from an accredited college or university (including WVU) who want to enroll for undergraduate credit may be admitted as non-degree students. Post-baccalaureate students who are not working toward a graduate degree may earn undergraduate credit and will be assessed undergraduate fees. Candidates for admission to this classification who are not graduates of WVU must submit an undergraduate application and an official transcript from the institution granting the latest degree. The Office of Admissions and Records can only accept transcripts sent from the registrar's office of the institution previously attended. Transcripts issued directly to you or facsimile (fax) transcripts are not considered official. WVU students need only to apply with an undergraduate application.

WVU will admit students who are not degree candidates, but who wish to take additional courses. If you meet University requirements, please submit a complete application and official transcripts from all institutions previously attended. If you have completed fewer than 29 college-level credits, please submit an official high school transcript.

Second Degree

College graduates wanting to earn a second bachelor's degree are required to submit an undergraduate application and official transcripts from all institutions previously attended. The Office of Admissions and Records can only accept transcripts sent from the registrars' offices of these institutions. Transcripts issued directly to you or facsimile (fax) transcripts are not considered official. In general, admission is granted on the basis of a cumulative grade point average of at least 2.0 in the first baccalaureate. Selected majors, such as engineering, business and economics, and education, have higher requirements. After you are admitted, the individual department evaluates your transcript and applies any appropriate credit from the first baccalaureate toward completion of the second. All residence requirements must be met to receive a second bachelor's degree. (See "Residence Requirements," page 31.)

Academic Forgiveness Policy

WVU allows an academic forgiveness to some students who are not successful in their first attempt at higher education.

To be eligible, a student cannot have been enrolled at a West Virginia state system of higher education institution for at least five calendar years and cannot have been enrolled in any other institution of higher learning during those five years. In order to determine your eligibility, you must complete the Academic Forgiveness Form which is available at the Office of Admissions and Records.

The conditions and rules of the academic forgiveness policy are as follows:

- Admission to WVU under the academic forgiveness policy is conditional upon satisfying the above stated non-enrollment period. In addition, a recommendation that the student be admitted under the academic forgiveness policy must be submitted by the dean of the college or school that the student plans to enter, and the recommendation must be approved by the Office of the Vice President for Academic Affairs.
- Upon admission to WVU under this policy, the student will be credited with the hours earned for courses completed with a grade of D or higher.
- Grades earned during any prior enrollment period will not be counted for purposes of calculating the student's grade point average, but grades earned will remain on the student's permanent record.
- The student must meet and complete all coursework required to meet the college's or school's requirements for graduation, but under no circumstances after the student has been admitted under the academic forgiveness policy shall the student complete fewer than 64 credit hours prior to earning a degree.
- A student admitted to WVU under this policy will follow all regulations regarding probation, suspension, and expulsion.

Measles and Rubella Immunization

If you are a new freshman or transfer student, you are required to provide proof of measles and rubella immunization. This requirement can be met by an immunization record signed by a physician or an official copy of your permanent high school health record with a report of the required immunizations. One of these documents must be sent to WVU before enrollment. Exemption from this requirement is granted for religious or medical reasons. Please request an exemption form from the Office of Admissions and Records. Failure to provide your immunization record will prevent you from further registration. For your protection, you are encouraged to get a second measles and rubella immunization.

Campus Visits and Tours

Prospective students and their families are encouraged to visit WVU. The WVU Visitors Resource Center is open from 8:00 a.m. until 5:00 p.m. Monday through Friday, and 9:00 a.m. until 4:00 p.m. on Saturday (excluding home football games). Guided tours are offered two times a day, six days a week; phone 1-800-344-WVU1, press 2; e-mail www.ia.wvu.edu/vrc.

We also sponsor open houses called Mountaineer Visitation Days. For more information, contact New Student Services at 1-800-344-WVU1, press 4.

Academic Information

Degree Programs Offered by WVU

Program	Bachelor's	Master's	Doctoral/ Professional
Multidisciplinary Studies	B.A.		
College of Business and Economics			
Accounting	B.S.B.Ad.		
Business Administration		M.B.A.	
Business Management	B.S.B.Ad.		
Economics	B.S.	M.A.	Ph.D.
Finance	B.S.B.Ad.		
Industrial Relations		M.S.	
Marketing	B.S.B.Ad.		
Professional Accountancy		M.P.A.	
College of Creative Arts			
Art		M.A.	
Music	B.M.	M.M.	D.M.A., Ph.D.
Theatre	B.F.A.	M.F.A.	
Visual and Performing Art	B.A.		
Visual Art	B.F.A.	M.F.A.	
College of Engineering and Mineral Resources			
Aerospace Engineering	B.S.A.E.	M.S.A.E.	
Chemical Engineering	B.S.Ch.E.	M.S.Ch.E.	
Civil Engineering	B.S.C.E.	M.S.C.E.	
Computer Engineering	B.S.Cp.E.		
Computer Science	B.S.	M.S.C.S.	Ph.D.
Electrical Engineering	B.S.E.E.	M.S.E.E.	
Engineering		M.S.E.	Ph.D.
Forensic Identification	B.S.F.I.		
Industrial Engineering	B.S.I.E.	M.S.I.E.	
Industrial Hygiene		M.S.	
Mechanical Engineering	B.S.M.E.	M.S.M.E.	
Mining Engineering	B.S.Min.E.	M.S.Min.E.	
Petroleum & Natural Gas Engineering	B.S.PNGE	M.S.PNGE	
Safety and Environmental Management		M.S.	
Software Engineering		M.S.S.E.	
College of Human Resources and Education			
Education			Ed.D.
Counseling		M.A.	
Counseling Psychology			Ph.D.
Educational Leadership		M.A.	
Educational Psychology		M.A.	
Elementary Education		M.A.	
Reading		M.A.	
Rehabilitation Counseling		M.S.	
Secondary Education		M.A.	
Special Education		M.A.	
Speech Pathology and Audiology	B.S.	M.S.	
Technology Education		M.A.	
College of Law			
Law			J.D.
Davis College of Agriculture, Forestry, and Consumer Sciences			
Agricultural and Resource Economics		M.S.	
Agricultural & Environmental Education	B.S.Agr.		
Agricultural Education		M.S.	

Agricultural Sciences			Ph.D.
Agriculture, Forestry & Consumer Sciences		M.Agr.	
Animal and Veterinary Sciences	B.S., B.S.Agr.	M.S.	
Family and Consumer Sciences	B.S. F.&C.S.	M.S. F.&C.S.	
Forest Resources Management	B.S.F.		
Forest Resource Science			Ph.D.
Forestry		M.S.F.	
Genetics and Developmental Biology		M.S.	Ph.D.
Landscape Architecture	B.S.L.A.		
Natural Resource Economics			Ph.D.
Plant and Soil Sciences	B.S./B.S.Agr.	M.S.	
Recreation, Parks & Tourism Resources	B.S.R.	M.S.	
Reproductive Physiology		M.S.	Ph.D.
Resource Management	B.S./B.S.Agr.		
Wildlife and Fisheries Resources	B.S.	M.S.	
Wood Industries	B.S.F.		

Eberly College of Arts and Sciences

Biology	B.A., B.S.	M.S.	Ph.D.
Chemistry	B.A., B.S.	M.S.	Ph.D.
Communication Studies	B.A.	M.A.	
Computer Science	B.S.		
Creative Writing		M.F.A.	
Economics	B.A.		
English	B.A.	M.A.	Ph.D.
Foreign Languages	B.A.	M.A.	
Forensic and Investigative Science	B.S.F.I.		
Geography	B.A.	M.A.	Ph.D.
Geology	B.A., B.S.	M.S.	Ph.D.
History	B.A.	M.A.	Ph.D.
Interdepartmental Studies	B.S./B.A.		
Legal Studies		M.L.S.	
Liberal Studies		M.A.L.S.	
Mathematics	B.A./B.S.	M.S	Ph.D.
Philosophy	B.A.		
Physics	B.A., B.S.	M.S.	Ph.D.
Political Science	B.A.	M.A.	Ph.D.
Psychology	B.A./B.S.	M.A.	Ph.D.
Public Administration		M.P.A.	
Regents Bachelor of Arts	B.A.		
Social Work	B.S.W.	M.S.W.	
Sociology		M.A.	
Sociology and Anthropology	B.A.		
Statistics		M.S.	

Perley Isaac Reed School of Journalism

Journalism	B.S.J.	M.S.J.	

School of Dentistry

Dental Hygiene	B.S.	M.S.	
Dentistry			D.D.S.
Dental Specialties		M.S.	

School of Medicine

Anatomy		M.S.	Ph.D.
Applied Exercise Science			Ph.D.
Biochemistry (Medical)		M.S.	Ph.D.
Community Health Promotion		M.S.	
Exercise Physiology	B.S.	M.S.	
Medical Technology	B.S.	M.S.	
Medicine			M.D.
Microbiology and Immunology		M.S.	Ph.D.

Occupational Therapy		M.O.T.	
Pharmacology and Toxicology		M.S.	Ph.D.
Physical Therapy		M.P.T.	
Physiology (Medical)		M.S.	Ph.D.
Public Health		M.P.H.	
School of Nursing			
Nursing	B.S.N.	M.S.N.	D.S.N.
School of Pharmacy			
Pharmaceutical Sciences		M.S.	Ph.D.
Pharmacy			Pharm.D.
School of Physical Education			
Physical Education	B.S.P.Ed.	M.S.	Ed.D.
Sport Studies	B.S.P.Ed.		

Academic Minors At WVU

Procedures for Declaring and Completing a Minor

The following steps should be followed to assure that completion of a formal minor is appropriately recognized and posted to the student's transcript:

1. A student interested in completing a minor (or minors) formally declares the intent to do so by completing a Declaration of Intent to Complete a Minor Field form. The form is available from the student's major advisor or college advisement/records office. The advisor sends two copies of the form to the college or school offering the minor.
2. The student works with his or her major advisor to incorporate minor requirements into schedule planning. Students are welcome to consult with advisors in the minor department if they wish to do so. Students who wish to complete a minor in music, women's studies, or ROTC must work with advisors for those programs.
3. When completing the Application for Graduation and Diploma, the student indicates the minor(s) for which certification is requested.
4. The student's major advisor/major college advisement office certifies that all minor requirements have been completed, and reports both major and minor certifications to Admissions and Records on the Tentative Graduation List form. (Women's studies and music minors are certified by those programs.)

Requirements

Requirements for academic minors are set by the department offering the minor. Substitutions may not be made without written approval of the minor department. *Courses in the minor may not be taken pass/fail.* A student may not complete a minor in his or her major field.

Available Minors

College of Business and Economics: business administration.

College of Creative Arts: art history; theatre.

Davis College of Agriculture, Forestry, and Consumer Sciences: agribusiness management; environmental economics, environmental microbiology; textiles, apparel, and merchandising; wildlife and fisheries resources; wood industries.

Eberly College of Arts and Sciences: communications studies; economics; English (including general, creative writing, and professional writing); foreign languages (including foreign languages in translation, French, German, linguistics, Russian, Spanish, and teaching English as a second language); geography, geology; history; international studies (including Africa and the Middle East, the Americas, Asia, Europe, and development studies); mathematics; Native American studies; philosophy; physics; political science (including American politics and policy, international and comparative politics, law and legal studies, political theory, and general); sociology and anthropology; statistics; women's studies.

College of Physical Education: sport behavior.

ROTC: aerospace studies; military science.

Academic Common Market

West Virginia provides its residents the opportunity, through the Academic Common Market (ACM) and through contract programs, to pursue academic programs not available within the state. Both programs permit West Virginians to enter out-of-state institutions at reduced tuition rates. Contract programs have been established for study in optometry, podiatry, and veterinary medicine. The ACM provides access to numerous graduate and undergraduate programs. The programs are restricted to West Virginia residents who have been accepted for admission to one of the specific programs at designated out-of-state institutions. Through reciprocal agreement, WVU allows residents of states within the ACM to enroll in graduate and undergraduate programs on an in-state tuition basis. Further information may be obtained from the Associate Provost for Academic Programs, Academic Affairs and Research, Stewart Hall, West Virginia University, P.O. Box 6203, Morgantown, WV 26506-6203. Application must be made through the higher education authority of the state of residence. West Virginia residents should apply through the Higher Education Policy Commission, 950 Kanawha Boulevard East, Charleston, WV 25301.

Baccalaureate Degrees

Goals of Undergraduate Education

West Virginia University is committed to providing a high-quality education to all students without regard to race or color, sex, sexual orientation, veteran status, religion, age, disability, national origin, creed, ancestry, or political affiliation.

Students should acquire a basic foundation in liberal studies. The perspectives of the humanities, social sciences, and natural sciences, and an appreciation of the arts, should be integrated with coursework in the major to facilitate an understanding of the world at large. This foundation for lifelong learning should provide the knowledge and skills necessary to deal with social, cultural, and technological change.

Students should develop critical thinking and problem-solving skills sufficient for life in contemporary society. These skills include the ability to read critically, listen critically, ask appropriate questions, gather relevant information, and apply critical analysis to reach logical conclusions. Central to these skills are mathematical literacy and proficiency in oral and written communications.

Students should attain proficiency in their major fields. This proficiency should enable them to be competitive in the job market or in admission to graduate or professional schools.

Students should acquire knowledge, understanding, and an appreciation of diversity in languages, cultures, ideas, and peoples, along with a desire to work so that all individuals are treated in a manner consistent with social justice.

Students should maintain a lifelong commitment to ethical behavior, responsible citizenship, and public service.

Commitment and Assessment

As a University, WVU is committed to academic quality and has developed a plan for a comprehensive assessment of student learning outcomes. The plan enables the University to measure the improvement of the quality of academic programs of instruction.

Student Responsibility

As a student, you are responsible for your academic well-being. Specifically, you are responsible for knowing your scholastic standing as it relates to the published regulations and standards of WVU. This responsibility includes the regulations of your college or school and the regulations of the department or division in which you are earning a degree. In order to graduate, you must go to your academic dean's office and complete an application for graduation and diploma. File your application during the first month of the semester or summer session in which you expect to graduate.

Academic Advising

When you enter WVU, you are assigned an academic advisor. Your advisor assists you as you prepare your schedule, assigns classes as required by your degree program, and certifies your study list to the director of Admissions and Records. Your advisor is also expected to give you advice and sympathetic guidance. You are expected to meet with your advisor to discuss your academic problems.

Students in Human Resources and Education, and some students in Arts and Sciences, are admitted to pre-programs in particular majors. You remain in a pre-program until you fulfill all requirements for admission to the degree program.

You may choose to enter other pre-programs. Normally, these programs require you to complete 30-58 credits before you are admitted to a degree program. If you select one of these pre-programs, you are advised through the Undergraduate Academic Services Center. The center provides advising in the following areas: general studies, pre-biology, pre-business and economics, pre-BFL (dual-degree program in business and foreign languages), pre-chemistry, pre-communication studies, pre-English, pre-foreign languages, pre-forensic and investigative sciences, pre-geology, pre-history, pre-interdepartmental majors (including pre-liberal arts and sciences), pre-journalism, pre-mathematics, pre-medical technology, pre-nursing, pre-occupational therapy, pre-pharmacy, pre-political science, pre-psychology, and pre-sociology and anthropology.

Students who are undecided on a career field may enroll in general studies. If you choose this option, you can explore several career and academic options before you make a final choice. While you explore these different areas, you enroll in courses that fulfill general University requirements for graduation and also provide a solid liberal arts foundation. You can be a general studies student for four semesters or until you are admitted to a degree program. If you select general studies, your advisor will be located in the Undergraduate Academic Services Center. The center's staff also advises part-time and special (non-degree) students.

Regulations Affecting Degrees

All degrees are conferred by the West Virginia University Board of Governors as recommended by the faculties of the various colleges and schools. A degree is granted at the end of the semester or summer session in which you complete the requirements for that degree, provided that you have submitted an application for graduation and diploma at your academic dean's office.

You become eligible to graduate when you complete the requirements of the University and your college or school that were in effect at the time you first registered at that college or school. You have seven years after your first registration to complete the requirements. If you do not, you will have to meet the requirements of a later catalog–one that is no more than seven years old when you complete your studies. With the consent of your advisor and your dean, you may choose to meet the conditions published in a later catalog.

Students must observe any program changes that are enacted by the West Virginia University Board of Governors, the West Virginia Higher Education Policy Commission, or by local, state, or federal law.

WVU policy dictates that, in view of their professional responsibilities to the general public, the faculty of a professional school may recommend to the president of the University, in writing, that a student be removed from its rolls. The recommendation of the faculty must indicate that the student is not fit to meet the qualifications and responsibilities of the profession.

WVU will not confer a degree or issue a transcript to any student until payment of all tuition, fees, and other indebtedness to any unit of the University is made.

Credits Required

All students entering WVU as freshmen or as transfer students with fewer than 29 hours must take University 101 in their first semester. Those who do not pass the course must re-enroll for the subsequent semester until they earn a passing grade. In certain majors, alternative courses are acceptable, these will be identified for students by their advisors.

Every undergraduate degree program at WVU requires that students satisfactorily complete an approved capstone experience prior to graduation. This requirement applies to all students entering WVU in Fall 2002 or thereafter.

Each degree program is based upon a combination of required courses and electives. Certain University requirements are listed below. In addition, the various colleges and schools determine their own credit requirements and course grade averages for graduation. Total credits vary from 128 to 145. Required grade point averages range from 2.0 to

2.5. The determination to count ROTC courses as free electives or toward fulfillment of Liberal Studies Program requirements is the prerogative of the dean of the college awarding the degree.

No more than three credit hours of ROTC may count toward fulfillment of the LSP requirement in each cluster area.

Second Degrees for WVU Students

To earn a second bachelor's degree, an additional 30 credit hours beyond the first degree will be required in most majors. All requirements must be satisfied, departmental and otherwise, for the second degree, as well as all residence requirements. (See "Residence Requirements," page 31.)

To earn two degrees at the same graduation date, you must satisfactorily complete at least 158 credits and meet all requirements, departmental and otherwise, of both degree programs.

Liberal Studies Program (LSP)

WVU recognizes the need for students to have a wide range of knowledge and experience to complement their chosen field of study. The LSP serves this purpose and is based on the following two principles.

1. In our world of rapid economic, social, and technological change, universities recognize that a broad educational foundation is necessary for the life-long learning that makes meaningful careers and other goals attainable. WVU's approach to this foundation is its Liberal Studies Program, which provides graduates with the skills and knowledge to continue their intellectual growth as a lifelong process. These skills and knowledge include the ability to reason clearly, communicate effectively, and understand major influences in society.
2. General education helps students to become thoughtful participants in a democratic society and to achieve the intellectual integration and awareness they need to meet changes and challenges in their personal, social, political, and professional lives. General education courses introduce the great ideas and controversies in human thought and experience. These courses provide breadth, perspective, and rigor that enable WVU graduates to:
   - Understand the past and its traditions.
   - Identify and resolve issues of personal and professional ethics.
   - Contribute in meaningful ways to their local, national, and global communities.
   - Understand alternative viewpoints and cultures.
   - Accept the assume responsibility for themselves and their world.
   - Interact constructively with people different from themselves.
   - Understand important issues confronting society.
   - Gain a critical understanding of the arts, sciences, and humanities.
   - Use quantitative and scientific knowledge and technology accurately.

Program Components

West Virginia University Liberal Studies Program requirements for all students who receive the baccalaureate degree are divided into a skills component and a distribution component. These are described below.

Skills Requirements

Writing

- All students must successfully complete English 101 and 102. This requirement is in addition to the Cluster A requirements described below.
- All students must successfully complete at least one course that requires a substantial writing component and in which the grade is partially determined by writing skills. These courses or course sections will be identified in the LSP portion of the *Schedule of Courses* by a "W". The student must complete English 102 before fulfilling the "W" requirement.

Mathematics

- All students must successfully complete at least three hours of mathematics or statistics. This requirement is in addition to the Cluster C requirement that is described below. Courses approved for the mathematics skills requirement: Mathematics 121, 124, 126, 129, 150, 155, 156, 180, 218, 231, Economics 225, and Statistics 211.

Cluster Courses

The University courses in the LSP that provide students with broad liberal knowledge and experience are grouped into three clusters:

Cluster A (Humanities and Fine Arts): The study of humanities develops knowledge of and appreciation for the accumulated wisdom and experience contained in world literature, history, fine arts, religion, and philosophy, with the objective of bringing the student to an active consciousness of the living, operating, and continuing values of human culture.

Cluster B (Social and Behavioral Sciences): The social and behavioral sciences develop in students the knowledge and appreciation of both themselves and the world in which they live. Through the study of anthropology, economics, geography, linguistics, political science, psychology, sociology, and communication studies, students are able to comprehend major concepts, evaluate movements and ideas, and anticipate future trends in societies both at home and abroad.

Cluster C (Natural Sciences and Mathematics): Courses in the natural sciences and mathematics provide information about the natural world and provide a perspective on how an understanding of the natural world is developed. Educated persons should have a knowledge of the physical, chemical, geological, and biological entities and processes that constitute the natural world. Courses in mathematics, statistics, and computer science can provide the technical tools for an understanding of the natural world, as well as an understanding of the methods and value of mathematics considered as a discipline in itself.

Distribution of Cluster Requirements

Cluster A Requirements 12 hours of Cluster A courses must be distributed according to the following provisions and successfully completed:

- Courses must be successfully completed in three disciplines.
- Two courses must be successfully completed in the same discipline.
- If foreign language courses are chosen to fulfill Cluster A requirements, no student may use more than one first-semester course of an elementary foreign language. Language courses in a student's native language may not be used to fulfill Cluster A requirements.
- No more than one multidisciplinary studies (MDS) course may be used to fulfill Cluster A requirements.

Cluster B Requirements 12 hours of Cluster B courses must be successfully completed and distributed according to the following provisions:

- Courses must be successfully completed in three disciplines.
- Two courses must be successfully completed in the same discipline.
- No more than one multidisciplinary studies (MDS) course may be used to fulfill Cluster B requirements.

Cluster C Requirements 11-12 hours of Cluster C courses must be successfully completed and distributed according to the following provisions:

- Courses must be successfully completed in two disciplines.
- At least one course must include a laboratory (identified in the *Schedule of Courses*).
- No more than one multidisciplinary studies (MDS) course may be used to fulfill Cluster C requirements.

Note: Foreign or minority culture requirement: one three-credit-hour course must focus substantially on the study of a foreign or minority culture or cultures or on women and/or issues of gender.

Inventory of LSP Courses

The courses listed below in Clusters A, B, and C do not constitute an inclusive listing. The Liberal Studies Committee changes the list of courses as evaluations are continually

made. Students and advisors should consult the latest *Schedule of Courses* for the most recent inventory of courses included in the Liberal Studies Program. Any course listed at any time during the student's period of study may be counted for LSP credit.

Cluster A Courses

Art (ART) 101,105,106
Classics (CLAS) 101, 102, 203, 204, 231, 232
Dance (DANC) 101
English (ENGL) 131, 132, 139*, 154*, 156*, 225, 226*, 231, 232, 233, 234, 235, 236, 241, 251, 254*, 261, 262, 263, 272, 273, 285*
Foreign Literature in Translation (FLIT) 113*, 125, 215*, 261*, 262*, 266*, 271*, 273*, 274*
French (FRCH) 100, 101, 102, 200, 203, 204
German (GER) 100, 101, 102, 200, 203, 204
History (HIST) 101, 102, 105*, 106*, 152, 153, 180, 201, 203, 205, 207, 209, 217*, 218*, 221*, 255, 256, 257, 259, 261, 264, 271, 272, 277, 281, 284
Humanities (HUM) 101, 102, 103, 104
Italian (ITAL) 101, 102, 203, 204
Japanese (JAPN) 101, 102, 203, 204
Landscape Architecture (LARC) 212
Mathematics (MATH) 280—Equiv To PHIL 360
Multidisciplinary Studies (MDS) 128, 220*, 230
Music (MUSC) 170, 173, 174, 175*, 176*, 270, 271
Native American Studies (NAS) 200*
Philosophy (PHIL) 100, 130, 140, 170, 244, 248, 260
Religious Studies (RELG) 105, 200, 201, 202, 203, 210, 220, 221, 230*, 231*, 232*, 250
Russian (RUSS) 101, 102, 203, 204
Spanish (SPAN) 100, 101, 102, 200, 203, 204
Speech Pathology and Audiology (SPA) 270
Theatre (THET) 101, 102, 103, 170*
Women's Studies (WMST) 170*, 215*

Cluster B Courses

Agricultural/Environmental Education (AGEE) 101, 220
Agriculture Resource Economics (ARE) 150, 187, 220
Broadcast News (BN) 215
Child Development and Family Studies (CDFS) 110
Communication Studies (COMM) 100, 102, 104, 105, 112, 122, 212*
Economics (ECON) 111, 201, 202
Forestry (FOR) 140
Geography (GEOG) 102*, 108, 205, 209, 210, 240, 241, 243*
History (HIST) 104*, 108*, 180*, 241*, 264, 281*
Journalism (JRL) 101
Linguistics (LING) 101
Military Science (MILS) 101, 102, 201, 202
Multidisciplinary Studies (MDS) 120, 122*, 124, 126, 129, 212, 220*
Native American Studies (NAS) 200*
Political Science (POLS) 101, 102, 103, 107, 210, 220, 250*, 260, 270, 271
Psychology (PSYC) 101, 232*, 241, 251
Social Work (SOWK) 105, 147*
Sociology and Anthropology (SOCA) 101, 105*, 221, 222, 223, 232, 235*, 238*, 240, 252, 255*, 256*, 257, 258
Sports Studies (SS) 271, 272
Women's Studies (WMST) 170*

Cluster C Courses

Astronomy (ASTR) 106
Biology (BIOL) 101,102, 103+, 104+,105
Chemistry (CHEM) 111+, 112+, 115+, 116+, 117+, 118+

Computer Science (CS) 101
Economics (ECON) 225
Environmental Microbiology (ENVM) 241
Environmental Protection (ENVP) 155
Geography (GEOG) 106*, 107, 110, 111*, 207
Geology (GEOL) 101, 102*, 103, 104*, 110, 111*, 203, 230*
History (HIST) 272, 284
Human Nutrition and Foods (HN&F) 171
Mathematics (MATH) 121, 124, 126, 128, 129, 150, 155, 156, 180, 218, 231
Multidisciplinary Studies (MDS) 120, 122*, 124, 126, 128
Philosophy (PHIL) 261
Physics (PHYS) 101*, 102*, 105*, 107, 108, 111*
Statistics (STAT) 111, 211, 215
Wildlife Management (WMAN) 150

Approved 300-level Courses

No 300-level courses are included in Cluster A, B, and C (above) because they are deemed to be not ordinarily appropriate for the Liberal Studies Program. However, a student may petition to take one 300-level course, from the list of approved courses indicated below, in fulfillment of the LSP requirement for each of the three cluster areas. The student must petition through his/her advisor for approval. This can be accomplished with the use of a standard petition form filled out by the student, approved by the advisor, and placed in the student's file.

Cluster A

Communication Studies (COMM) 305
Multidisciplinary Studies (MDS) 301
Philosophy (PHIL) 301, 302, 306, 308, 310, 321, 323, 325, 331, 346, 351, 355

Cluster B

Communication Studies (COMM) 305, 306, 308, 309, *316, 317
Community Health Promotions (CHPR) 390*
Economics (ECON) 301
Multidisciplinary Studies (MDS) 301
Political Science (POLS) 335*, 350*, 351*
Sports Studies (SS) 373*

*Satisfies the foreign culture, minority, or gender studies requirements.
*Satisfies the laboratory course requirement.

Residence Requirements

If you decide to transfer to WVU from another institution of higher learning, then you should transfer no later than the start of your third year. Under no circumstances will a student who enters WVU after October 1 in any year be allowed to receive a degree at the next commencement.

In some special cases, you can leave WVU at the end of your third year, and still receive your degree from WVU. You must enter another accredited institution with the purpose of taking a combined program that will lead to two degrees or prepare for graduate study. Before you leave, you must apply to the Academic Standards Committee of your college to request permission to do the work of the fourth year, or a part thereof, at the other institution but still receive the degree from WVU. You will receive your degree when you present the proper records from the other school.

If you are a transfer student who has completed all of your undergraduate work in another school in the West Virginia system of higher education, then you must complete either your last 30 hours of work at WVU or at least 36 hours of work at WVU of which 16 of the last 32 hours must be on campus. If you are a transfer student whose undergraduate work has been completed outside the West Virginia system of higher education, then you must complete a total of 90 hours or at least the last 30 hours of work in residence at WVU. You may be required to earn up to 15 hours in your major field regardless of the number of hours or the nature of the courses transferred.

Work Done Out of Residence

WVU's policy is to discourage taking regular residence courses in absentia. If you begin a course at WVU but fail to complete it due to illness or some other acceptable reason, you may receive permission to complete the work in absentia. Permission must be granted by the Academic Standards Committee of the college or school concerned, and the work must be done under the guidance of a WVU professor. Credit in such cases is allowed only upon a report of a grade of C or better on the final examination. This regulation does not apply to WVU off-campus courses.

If you fail a course (receive a final grade of F) taken at WVU, you must repeat the course at WVU to receive credit for that course. The dean of the college or school in which you are enrolled may authorize an exception to this regulation. If so, then the dean should provide a letter to be placed in your folder authorizing the exception and explaining its basis.

You should be aware of the requirements for residence and your specific degree requirements described in the catalog when transferring credit from other institutions. If you are transferring credit from institutions outside the West Virginia state system of higher education, WVU will accept credit only for courses in which you earned a grade of D* or higher provided other conditions above have been met. Under no circumstances will grades be transferred from institutions outside the state system.

***Note:** D grades are accepted only for students entering at the WVU Morgantown campus for the first time during or after Fall 1997. Students entering before Fall 1997 may only transfer grades of C or higher.

WVU Transient Students

If you decide to take a course or courses at another school, you must have written approval from your advisor, your dean, and the director of Admissions and Records or designee. To receive such approval, you must have an overall 2.0 average. All approved college-level work is accepted for transfer from accredited institutions, provided the above requirements have been met and you have an overall GPA of 2.0.

Advanced Placement Program (AP)

West Virginia University encourages you to work to your full capacity and to earn your degree at your own learning speed. As a high school junior or senior, you can take college-level courses at your school in conjunction with the College Entrance Examination Board (CEEB). The Advanced Placement Service administers three-hour examinations to show competency equal to that received by taking the actual college course. The chart on page 34 shows the subject areas, the necessary test scores, and the WVU equivalent courses.

College Level Examination Program (CLEP)

If you apply for admission to WVU and you have gained a significant level of maturity through your life experiences, you may gain college credit for these educationally related experiences through the College Level Examination Program (CLEP) of the CEEB. A policy of the WVU Board of Governors allows University credit to be awarded for successful completion of CLEP subject examinations, except English composition and freshman English. Up to 34 hours of general education credit may be earned for successful performance on the CLEP general examinations. Although this program was designed primarily for adults, exceptionally well-qualified high school seniors may use the CLEP program. The table on page 35 indicates the areas in which WVU grants credit based on the minimum score required. It should be noted that no student is eligible for CLEP credits after he or she has enrolled at WVU.

A veteran may receive advanced placement for specific military experience and should contact the Transfer Unit of Admissions and Records for specific information.

Credit by Examination

If you are currently enrolled, you may receive credit for a course or courses if you can demonstrate competency in the course content. The department offering the course determines evaluation standards for the student's competency. If skill and cognitive abilities are components of the course, then both are evaluated. Credit is given only when a satisfactory degree of competency is shown.

A college, school, or department may ask you to prepare a self-evaluation statement. The purpose of the statement is to determine the competency you believe you have and the methods by which you achieved it. If you are interested in credit by examination, contact the dean in the college or school offering the course.

Credit for Correspondence Work

You may receive credit for correspondence work in non-laboratory courses. You have to meet certain conditions that govern this credit:

- A maximum of 30 hours is acceptable.
- The work must be from accredited institutions.
- The institution must accept the credit toward its own degrees.
- WVU must ordinarily accept that institution's residence work.

500-Level Courses

Off-campus If you are an advanced student and wish to take an off-campus course numbered 500-599, you must submit an undergraduate application for admission and have your official transcripts sent to the Office of Admissions and Records from all of the colleges and universities that you previously attended; the transcript cannot be one sent to you or a facsimile (fax) transcript. You must be classified as either a junior or senior and have a cumulative grade point average of at least 3.0 on a 4.0 scale. The special form granting permission to take a 500-level course may be obtained from the Office of Admissions and Records.

On-campus If you are an undergraduate junior or senior in any class carrying a 500-level course number, you must have at least a 3.0 cumulative grade point average and have written approval on a special form from the instructor and your advisor. This form may also be obtained from the Office of Admissions and Records.

Graduate Credit via Senior Petition

You may begin graduate study early through the University's senior petition policy. A senior petition form may be obtained from the Office of Admissions and Records. After you get the form, you must have it signed by your advisor and the dean of the college granting your degree and the dean of the college of your intended graduate degree (if different). An individual from another West Virginia state higher education system school desiring to take a course at WVU must have the form signed by his or her advisor and the registrar. These signatures are necessary to certify the information contained on the form is correct and the student has a cumulative 3.0 grade point average. The University has certain policies for you to enroll in a graduate course for graduate credit. The policies are:

- Senior petition applies only to courses numbered 400-599. You must be within 12 hours of receiving your bachelor's degree, and your grade point average must be at least 3.0 on a 4.0 scale.
- You can receive only 12 graduate hours through the senior petition.
- You must have the proper signatures on your senior petition by the time you enroll in the petitioned courses.

Return the approved senior petition to the Office of Admissions and Records. It is kept on file so that you receive graduate credit for these courses on your permanent record. The dean of the college or school in which you are taking graduate courses must approve any exceptions to the policy.

Note: If you receive graduate credit for a course, the credit for that course does not count for your undergraduate degree.

Visitors

Full-time University students may attend classes as visitors. To visit a class, you must have permission in writing from your advisor and the instructor of the course. A member of the administration, teaching staff, or other regular University employees may attend classes as visitors. These individuals must have written permission from their department and the instructor of the class. A visitor does not receive credit for a class. You may not apply for credit by exam in a class in which you were a visitor.

Advanced Placement Program (AP)

Examination	Minimum Score	Credit Hours	Course Equivalent
ART (Studio)			
Drawing Portfolio	To be determined by Division of Art		
General Portfolio	To be determined by Division of Art		
ART HISTORY	3	3	ART 101
BIOLOGY	3	8	BIOL 101, 102, 103, 104
	4	4	BIOL 115
CHEMISTRY	3	8	CHEM 115-116
CLASSICS			
Latin: Virgil	3	3	CLAS open credit
Latin: Catullus-Horace	3	3	CLAS open credit
COMPUTER SCIENCE			
Computer Science A	3	3	open credit CS
Computer Science AB	3	6	open credit CS
(6 units maximum for both tests)			
ECONOMICS			
Microeconomics	3	3	ECON 201
Macroeconomics	3	3	ECON 202
ENGLISH			
Engl. Lit. and Comp.	3	3	ENGL 131
Engl. Lit. and Comp.	4	6	ENGL 131-132
Engl. Lang. and Comp.	3	3	ENGL 101
Engl. Lang. and Comp.	4	6	ENGL 101-102
(9 units maximum for both tests)			
ENVIRONMENTAL SCIENCE	3	4	GEOL 110 & 111/GEOG 110 &111
FOREIGN LANGUAGE			
French Language	3	6	FRCH 301-302
French Literature	3	6	FRCH open credit
German Language	3	6	GER 301-302
Spanish Language	3	6	SPAN 301-302
Spanish Literature	3	6	SPAN open credit
GOVERNMENT AND POLITICS			
American	3	3	POLS 102
Comparative	3	3	POLS 101
HISTORY			
American	3	6	HIST 152-153
European	3	6	HIST 101-102
MATHEMATICS			
Calculus AB	3	4	MATH 129
Calculus AB	4	4	MATH 155
Calculus BC	3	4	MATH 155
Calculus BC	4	8	MATH 155-156
MUSIC			
Theory	3	3	To be determined by Division of Music
PHYSICS			
Physics B	3	4	PHYS 101*
Physics B	4	8	PHYS 101-102*
Physics C Mechanics	3	4	PHYS 111*
Phys. C Elec./Magnet.	3	4	PHYS 112*
PSYCHOLOGY			
Introductory Psych.	3	3	PSYCH 101
STATISTICS	3	3	STAT 211

***Note:** Students receiving AP credit for any physics course will have to register for and complete the corresponding physics labs by special arrangement with the Department of Physics.

College Level Examination Program (CLEP)

General Examinations	WVU Equivalent	Minimum Score Required
English Composition (with essay)	ENGL 101 (3 hr.)	59
English Composition (multiple choice)	No credit	
Humanities	LSP A non-specified credit (6 hr.)	50
Mathematics	LSP C non-specified credit (4 hr.)	50
Natural Science	LSP C non-specified credit (6 hr.)	50
Social Science and History	LSP B non-specified credit (6 hr.)	50
Subject Tests		
American Literature	ENGL 241 (3 hr.)	59
Analysis & Interpret. of Literature	ENGL 131 (3 hr.)	59
College Composition	No credit	
English Literature	ENGL 262 (3 hr.)	60
Freshman English	No credit	
College French (levels 1 and 2)	FRCH 101 and 102 (6 hr.)	44
	FRCH 203 and 204 (6 hr.)	55
College German (levels 1 and 2)	GER 101 and 102 (6 hr.)	43
	GER 203 and 204 (6 hr.)	54
College Spanish (levels 1 and 2)	SPAN 101 and 102 (6 hr.)	45
	SPAN 203 and 204 (6 hr.)	54
American Government	POLS 102 (3 hr.)	50
American History I	HIST 152 (3 hr.)	49
American History II	HIST 153 (3 hr.)	49
Western Civilization I	HIST 101 (3 hr.)	50
Western Civilization II	HIST 102 (3 hr.)	50
General Psychology	PSYC 101 (3 hr.)	50
Human Growth and Development	CD&FS 110 (3 hr.)	51
Intro. Macroeconomics	ECON 202 (3 hr.)	50
Intro. Microeconomics	ECON 201 (3 hr.)	50
Intro. Sociology	SOCA 101 (3 hr.)	50
College Algebra	MATH 126 (3 hr.)	48
Trigonometry	MATH 128 (3 hr.)	54
College Algebra/Trig.	MATH 129 (4 hr.)	50
Calculus with Elementary Functions	MATH 155 (4 hr.)	49
General Biology	BIOL 101 and 102 (6 hr.) (no credit for the labs)	49
General Chemistry	CHEM 116 (4 hr.)	70
Computers and Data Processing	To be determined by the dept.	49
Intro. to Management	BCOR 370 (3 hr.)	50
Intro. Accounting	ACCT 201 and 202 (6 hr.)	54
Intro. Business Law	BCOR 320 (3 hr.)	51

Auditors

An auditor may register for courses and pay full fees. You do not receive credit for the course. If you audit a course, you must let one semester pass before you enroll in the course for credit. You may change your status from audit to grade or grade to audit only during the registration period. Attendance requirements for auditors are determined by the instructor of the course. The instructor may direct the Office of Admissions and Records to remove an auditor from a class list or grade report if attendance requirements are not met.

Summer Sessions

WVU has two six-week sessions. Summer Session One begins in the middle of May and ends on June 30. Summer Session Two begins on July 1 and ends the second week of August. Requirements for admission and work performance for the summer sessions are the same as for the regular semesters.

You may earn credit toward a baccalaureate, master's, doctoral, or professional degree in the summer sessions. Summer offerings vary from year to year. For complete information concerning course offerings during the summer sessions, consult the *Summer Session Schedule of Courses.*

Evening Classes

If you are unable to attend classes during the day, the University offers evening courses taught by regular faculty. These courses carry full college credit and are offered at both the undergraduate and graduate levels.

Classification of Students

WVU undergraduates are classified as freshmen, sophomores, juniors, or seniors. These classifications are based upon the number of hours completed. The classifications are as follows:

Freshman classification	1-28 hours, inclusive
Sophomore classification	29-58 hours, inclusive
Junior classification	59-88 hours, inclusive
Senior classification	89 or more semester hours

Grade Point Average

All academic units of the University require minimum standards of scholastic quality. Your grade point average (GPA) is computed on grades earned in courses taken at WVU and institutions in the West Virginia system of higher education only. To be eligible to receive a baccalaureate you must have a GPA of at least 2.0 at the time of graduation. Some degree programs require a higher grade point average overall or in the major courses. Your GPA is based on all work for which you received letter grades other than W, WU, and P. See "D/F Repeat Policy," page 39.

You must make certain that you know your grade point standing. Obtain the necessary information concerning your grade point standing from the dean of your college or school. To determine your GPA, use the method described in the section on grade points.

Graduation with Honors

WVU recognizes distinguished academic achievement by awarding degrees *cum laude, magna cum laude*, and *summa cum laude*. This distinction can be awarded on initial or second baccalaureates and specified entry-level professional degrees. All candidates for a baccalaureate with a GPA of 3.8 or higher graduate *summa cum laude.* Those with a grade-point average of less than 3.8, but equal to or above 3.6, graduate *magna cum laude.* Those with a GPA of less than 3.6, but equal to or above 3.4, graduate *cum laude.*

Your grade-point average for honors consideration for a baccalaureate is based on baccalaureate-level college work attempted through the next to the last semester or through the last semester, whichever GPA is higher. This calculation includes transferable baccalaureate-level college work attempted at all regionally accredited higher education institutions you have attended. Credit hours earned with a grade of P or S are not

considered in the determination. The GPA for honors consideration for entry-level professional degrees is based on baccalaureate-level and professional-level work attempted through the next to the last semester or through the last semester, whichever GPA is higher. This calculation includes transferable baccalaureate-level and professional-level college work attempted at all regionally accredited higher education institutions you have attended. Credit hours earned with a grade of P or S are not considered in the determination. Additionally, your GPA on WVU work must meet the requirements stated for the level of honors to be designated. If your GPA on WVU work indicates a lower level of honors, then the WVU GPA shall govern the specific designation.

Students entering and completing a second baccalaureate program following completion of the initial degree at the University are eligible to receive the honors designation. Grade point averages for graduation with honors on second baccalaureates shall be computed on the last 80 semester hours of baccalaureate-level work excluding credit earned with a P or S. At least 30 semester hours must have been completed in the second degree program through the penultimate semester.

A request for an exception to this policy may be made to your dean. After review, the dean will forward all requests for exceptions of this policy to the provost for the final decision.

Academic Progress

Courses

As a general rule, most courses taught at WVU extend for one semester, although some extend for two semesters. Credit is not awarded for a course if you do not attend the whole course. The only exception to this rule occurs if the Committee on Academic Standards decides to grant an exception. Grades reported at the end of the first semester in a two-semester course are merely an indication of the quality of the student's work to that point. Credit is not given for that part of the course completed. Courses taught in the summer sessions carry the same credit value as fall and spring semester courses.

Evaluation of Student Progress

Your progress is evaluated by a variety of methods. The measurement and evaluation of learning are consistent with the objectives of the course and provide the opportunity for you and your instructor to evaluate your progress. The University discourages evaluation by final examination only. You are responsible for all materials presented or assigned in scheduled instructional sections. If you do not complete all assigned work, you may earn an incomplete (I) or a failing grade (F).

The last week of each semester of the academic year is designated as finals week. Final examinations for the summer sessions are given on the last day of classes. The *Schedule of Courses* gives the dates and times for final examinations.

Practical laboratory tests, make-up examinations, and regularly scheduled short quizzes are the only tests permitted for day classes during the week of classes preceding finals week. Evening classes have their final exams on the last meeting of the class preceding finals week.

If you take a section of a multi-section course, you may be required to take the departmental final examination, given during the regular final examination period.

Grading System

- A excellent (given only to students of superior ability and attainment)
- B good (given only to students who are well above average, but not in the highest group)
- C fair (average for undergraduate students)
- D poor but passing (cannot be counted for graduate credit)
- F failure
- I incomplete
- W withdrawal from a course before the date specified in the University calendar
- WU withdrawal from the University doing unsatisfactory work
- P pass (see "Pass/Fail Grading" below)

X auditor, no grade and no credit
CR credit but no grade
PR progress final grade at end of the second semester (HSC)
S satisfactory
U unsatisfactory (equivalent to F)
H honors course (medical school courses only)
INC permanent incomplete
IF incomplete grade not removed by next regular term (computed as an F)
UF unforgivable F (not eligible for D/F repeat policy)

Pass/Fail Grading

Pass/fail grading encourages you to take elective courses not related to your degree concentration. Pass/fail grading also facilitates grading in competency-based courses which may be an integral part of your program.

Student Option Any full-time student who has completed 15 hours or more and who has maintained a 2.0 grade point average may take a maximum of four hours each semester or summer session on a pass/fail basis. Any course taken on a pass/fail basis must be a free elective. You are limited to a total of 18 hours of pass/fail credit in your collegiate career. Unless otherwise indicated, courses in your major, courses in other subjects that are required by the major, and courses taken to satisfy University, college, school, or departmental requirements are excluded from pass/fail. For example, courses elected to satisfy the English, Liberal Studies Program (LSP), or foreign language requirements may not be taken for pass-fail grading.

Note: Only courses numbered 499 or lower may be graded pass/fail. Courses numbered 500 or higher may be graded satisfactory/unsatisfactory (which is included in the normal grading modes).

If you elect a course on a pass/fail basis, you are graded as a regular student. The instructor turns in the appropriate letter grade to the Office of Admissions and Records. This letter grade is then converted to a P on the basis of A, B, C, or D for a pass and F for a fail. The grade of P does not affect your grade point average. However, any F grade affects your grade point average whether it is a regular grade or a pass/fail grade.

You choose the option of pass/fail grading for a course during the registration period. Once the registration period has ended, you may not change the grade status in the course.

College or School Option A department or unit may designate any performance- or competency-based course as exclusively pass/fail. To institute this, the college or school must have the approval of the Faculty Senate. Courses offered only as pass/fail are not included in the maximum of 18 hours that may be freely elected under the student option.

Grade Points

Each letter grade has a numeric value. Grade points are based on this number value and the credit-hour value of the course.

A	B	C	D	F	I	U
4	3	2	1	0	0	0

The grade point average is computed on all work for which you registered, with the following exceptions:

- Courses with a grade of W, WU, P, S, and X carry no grade value. The grade of incomplete (I) initially carries no grade value.
- The grade of I is given when the instructor of the course believes that the work is unavoidably incomplete or that an additional examination is justified. To remove the grade of I, you do not register for the course again; instead, you arrange to submit incomplete or supplemental work to the original instructor of the course. When you receive the grade of I and later remove the incomplete grade, the grade-point average is calculated on the basis of the new grade. If you do not remove the I grade within the next semester in which you are enrolled, the grade of I is treated as an F (failure). The Academic Standards Committee of the appropriate college or school may allow you to postpone removal of the I grade if you can justify a delay.

- If you are working toward teacher certification, you are responsible for every registration in a course in which the grade of A, B, C, D, F, WU, P, X, or I is received.

GPA Calculations

Students like to know how to calculate their overall and semester grade-point averages. The following example shows how to do it. Assume you are registered for 16 hours and receive the following grades in these courses:

English 101	B	Mathematics 126	A
Geology 101	C	Political Science 101	B
Spanish 101	D	Psycholgy 201	P

Course	Credits	Grade	Value	Credits x Value	Grade Points Earned
English 101	3	B	3	3 x 3	= 9
Geology 101	3	C	2	3 x 2	= 6
Spanish 101	3	D	1	3 x 1	= 3
Mathematics 126	3	A	4	3 x 4	=12
Political Sci. 101	3	B	3	3 x 3	= 9
Psycholgy 201	1	P	0	1 x 0	= 0

1. Multiply the credit by the grade value to get the grade points earned for each course.
2. Add the total grade points, in this case, 39.
3. Divide the total grade points earned by the total credit hours with a grade value. Remember that P grades have no grade value, so in this case, there are 15 credit hours for the GPA calculation: 39 divided by 15 = grade point average of 2.6.

D/F Repeat Policy

WVU has a D/F repeat policy for undergraduate students who have not received their initial baccalaureate. If you earn a D or F in a course at WVU taken no later than the semester or summer session registration when you reach a cumulative total of 60 hours attempted, you are eligible to "D/F repeat" that course by meeting with your academic advisor sometime during the semester in which you are repeating the course and filling out the appropriate forms. The course must be repeated at WVU, Potomac State College of WVU, WVU at Parkersburg, or WVU Institute of Technology. You will have only one opportunity to improve your original grade. The new grade becomes the grade that counts, even if your performance is worse than when you were originally graded.

When you have D/F repeated a course, the following happens:

1. The original grade is disregarded for the purpose of determining your overall GPA, it is marked as excluded (E) in the semester that you originally took the course.
2. The original grade is not deleted from your permanent record.
3. The second grade is entered on your transcript and marked as included (I) in the semester that you repeated the course.
4. You can exercise your right under the D/F repeat policy at any time before you receive your initial baccalaureate. If you get a grade of F in a course for academic dishonesty the grade is not eligible for change under the D/F repeat provisions. Such a failure is indicated on your permanent record by an UF and is calculated in your GPA.

Grade Reports

During the seventh week of classes in the fall and spring semesters, instructors submit a report of all undergraduate students earning grades of D or F in undergraduate courses. These grades are used for counseling and are not recorded on the student's official transcript. These reports are sent first to the Office of Admissions and Records and then to the student, the student's advisor, and the dean of the college or school in which the student is enrolled.

Final grades are reported within 48 hours after the end of the final examination. The instructor submits the grade reports to the Office of Admissions and Records. The final grades of all seniors provisionally approved for graduation at the close of each semester or summer session are reported to the deans of their colleges or schools. Special report forms for this purpose are supplied by the student's dean.

At the end of each semester or at the close of each summer session, a report of each student's work is prepared for that period and sent to the student.

Family Educational Rights and Privacy Act

The Family Educational Rights and Privacy Act of 1974 is a federal law which states: (a) that a written institutional policy must be established; and (b) that a statement of adopted procedures covering the privacy rights of students be made available. The law provides that the institution will maintain the confidentiality of student education records.

WVU accords all the rights under the law to students who are declared independent. No one outside WVU shall have access to nor will WVU disclose any information from students' educational records, without the written consent of students except to personnel within WVU and the West Virginia Higher Education Policy Commission; to persons or organizations providing students' financial aid; to accrediting agencies carrying out their accreditation function; to persons in compliances with judicial order; to organizations conducting studies for, or on behalf of, education agencies of institutions for the purpose of developing, validating, or administering predictive testing student aid programs, and improving instruction; and to persons in an emergency in order to protect the health or safety of students and or other persons. All these exceptions are permitted under the act.

The act also permits disclosure of information from students' educational records, without the written consent of students, to parents of a dependent student of such parents, as defined in Section 152 of the Internal Revenue Code of 1954, as amended.

The West Virginia University Policy on the Family Educational Rights and Privacy Act explains in detail the procedures to be used for compliance with the provisions of the act. Copies of the policy can be found in the offices of all deans and directors. The policy also is printed in the *Student Handbook* and annually in the *Daily Anthenaeum*. The offices of the deans and directors can inform students as to the locations of all education records maintained on students by West Virginia University.

Official Transcripts

Each copy of an official transcript costs six dollars, payable by check or money order. You may request, in person, an on-the-spot transcript at a cost of ten dollars. Priority transcripts are not available at all times. Because of demand, it may take two or three weeks to process an application for a regular transcript at the close of a semester or summer session. At other times, it is the policy of WVU to process all regular transcript requests within 48 hours of receipt of the request.

If you owe money or have some other financial obligation to any unit of the University, you forfeit your right to claim a transcript of your record or your diploma until these financial obligations have been met.

When you apply for a transcript, you must furnish your last date of attendance and your student number. Be sure to indicate the full name under which you were enrolled. Requests for transcripts must be made in writing to the Office of Admissions and Records. We cannot accept telephone requests because of the risk to the security of your record.

Final Grade Appeals

Students have the right to appeal final course grades which they believe reflect a capricious, arbitrary, or prejudiced academic evaluation, or reflect discrimination based on race, sex, age, handicap, veteran status, religion or creed, sexual orientation, color, or national origin. The grade appealed shall remain in effect until the appeal procedure is completed or the problem resolved. The primary intent of this procedure is to provide a mechanism whereby a student might appeal a failing grade or a grade low enough to cause the student to be eliminated from some program or to require the repetition of a course. Grade appeals that do not meet this classification are not precluded.

Step 1. The student shall discuss the complaint with the instructor involved prior to the mid-semester of the succeeding regular semester, whether the student is enrolled or

not. If the two parties are unable to resolve the matter satisfactorily, or if the instructor is not available, or if the nature of the complaint makes discussion with the instructor inappropriate, the student shall notify the chairperson of the instructor's department or division (or, if none, the dean). The chairperson or dean shall assume the role of an informal facilitator and assist in their resolution attempts. If the problem is not resolved within 15 calendar days from when the complaint is first lodged, the student may proceed directly to step 2.

Step 2. The student must prepare and sign a document which states the facts constituting the basis for the appeal within 30 calendar days from when the original complaint was lodged. Copies of this document shall be given to the instructor and to the instructor's chairperson (or, if none, to the dean). If, within 15 calendar days of receipt of the student's signed document, the chairperson does not resolve the problem to the satisfaction of the student, the student will forward the complaint to the instructor's dean (see step 3).

Step 3. Within 15 calendar days of receipt of the complaint, the instructor's dean shall make a determination regarding the grade, making any recommendation for a grade change to the instructor involved. If the instructor involved does not act on the dean's recommendation, or if the student is in disagreement with the decision of the dean, the dean will refer the case to a representative committee, appointed by the dean, for final resolution. This committee shall consist of three or more faculty members, including at least one person outside the instructor's discipline.

1. Upon receiving an appeal, the committee will notify in writing the faculty member involved of the grade challenge, which shall include a statement of the facts and evidence to be presented by the student.
2. The committee shall provide to the faculty member involved and the student making the appeal written notification of their right to appear at a hearing to be held before the department, college, or school representative committee, together with the notice of the date, time, and place of the hearing.
3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.
4. The final decision of this committee shall be forwarded to the instructor and to the dean involved. If the decision requires a change of grade, the instructor shall take action in accordance with the committee's decision.
5. If the instructor does not act within five days, the dean shall make any necessary grade adjustment.
6. In the case of grade appeals, the dean functions as the president's designee; therefore, implementation of this decision shall end the appeal procedure.

Absences

Importance of Class Attendance At WVU, class attendance contributes significantly to academic success. Students who attend classes regularly tend to earn higher grades and have higher passing rates in courses. Excessive absences may jeopardize students' grades or even their ability to continue their courses.

Attendance Policies Instructors must set attendance policies that are appropriate for the goals and instructional strategies of their courses. Instructors may include attendance records in determining the final course grade. All attendance policies that affect students' grades must be announced in writing within the first week of class. Moreover, instructors are responsible for keeping accurate enrollment records, and for keeping accurate attendance records when attendance is used in grading. Attendance policies thought to violate the statement on student attendance should be discussed with the instructor, then with the department chair, and finally the college dean, if necessary.

Class Absences Students who are absent from class for any reason are responsible for all missed work and for contacting their instructors promptly, unless the instructors' policies require otherwise. However, instructors cannot require documentation of student illness from any medical provider as part of an attendance policy, since medical conditions are confidential and frequently not verifiable.

Make-Up Examinations Students absent from regularly scheduled examinations because of authorized University activities will have the opportunity to take them at an alternate time. Such make-up examinations should be of comparable difficulty to the original examination.

Students in courses with regularly scheduled evening examinations shall have the opportunity to make up these examinations if they miss them in order to attend a regularly scheduled class that meets at the same time. Such make-up examinations should be of comparable difficulty to the original examination.

Attendance at a regularly scheduled evening examination will not excuse a student from a regularly scheduled class that meets at the same time as the examination.

Days of Special Concern Instructors are urged not to schedule examinations or field trips on "days of special concern" that are identified in the *Schedule of Courses*.

Withdrawals From Individual Classes

Deadlines Until the Friday of the tenth week of class (or Friday of the fourth week in a six-week summer session, or Friday of the second week of a three-week summer session), students may withdraw from individual courses. Deadlines are published in the University *Schedule of Courses* each semester. If you follow all established University procedures and withdraw before the published deadline, you will receive a W on your transcript. Grade point averages are not affected in any way by this mark.

Procedures

Before withdrawing from individual classes, consult your advisor to determine if:

- Your course load would be reduced below the minimal requirements set by your college or school. If so, you must get permission from the Committee on Academic Standards of your college or school.
- Your course load would be reduced below the minimal number of hours required to qualify for financial aid, varsity athletic competition, or international full-time student status.
- The courses to be dropped are required to fulfill academic probationary conditions.
- The courses from which you want to withdraw might be corequisite with other courses you are taking, or prerequisite to other courses required for the next term.

Withdrawal From All Classes for the Term

Deadlines You may withdraw from the University any time before the last day of a semester or session on which regular classes are scheduled to meet. If you withdraw before the Friday of the tenth week of classes (or the Friday of the fourth week in a six-week summer session, or the Friday of the second week of a three-week summer session) you receive grades of W in all of your courses for that semester or session. After these deadlines, you will receive grades of W in those courses in which you made satisfactory progress and possibly grades of WU for courses in which your progress had been unsatisfactory.

Procedures

1. Students who decide to leave WVU should withdraw from all classes and must do so in accordance with established University policy. Students are responsible for all financial obligations and for following established procedures. This includes the completion of forms and the delivery of the completed forms to appropriate officials. Students not fulfilling their financial obligations may have difficulty withdrawing from the University.
2. Students who are unable to withdraw in person because of illness, accident, or other valid reasons still must send notification of their intention to withdraw to the Office of Admissions and Records. The notice should be verified in writing and the student Mountaineer card enclosed.
3. Students who desire to withdraw from WVU must obtain a withdrawal form from the Admissions and Records Office (or dean's office of an off-campus instructional unit). Withdrawal procedure is explained at that time. The student's Mountaineer card must be presented.
4. With the help of their academic advisors, students are responsible for determining how withdrawal from the University may affect their future status with the University, including such aspects as suspension for failure to make progress toward a degree or violation of established academic probation and eligibility for scholarships, fellowships, or financial aid.

Academic Leave of Absence

WVU offers undergraduate students in good standing, as defined by WVU's uniform suspension policy and not subject to disciplinary action, the opportunity to request an academic leave of absence. The academic leave of absence is designed for the student who wishes to be away from his or her academic endeavors at WVU for one or more semesters, but intends to return at a later date. Leave of absence status must be requested before the beginning of the semester for which the leave is desired. The academic records of students on an academic leave of absence remain in an active status. While on an academic leave of absence, the student retains the right to use certain campus facilities such as the Study Skills Center, Writing Lab, Math Lab, Student Counseling Service, and Career Services. When a student decides to return to WVU after his or her academic leave of absence, application fees are waived. If a student attends any institutions of higher education while on leave of absence, an overall average of 2.0 must be obtained on all work attempted in order to be eligible to return. An overall grade point average of 2.0 on all work attempted while on leave combined with the WVU grade point average is also acceptable. While on an academic leave of absence, the student receives communications from WVU. Academic advisors and the Office of Admissions and Records can provide additional details about an academic leave and eligibility requirements.

Re-Enrollment After Withdrawal

After you withdraw from WVU in two consecutive semesters (excluding summer sessions), you may not register for further work without approval of the dean of the college or school in which you want to register, subject to conditions set by that dean.

Committee on Academic Standards

The Committee on Academic Standards of each college or school shall have authority to proceed according to its best judgment in regard to students referred to it for consideration. All orders of the committee shall become effective when approved by the dean of the college or school. In exercising its authority, the committee shall not suspend a student during a semester except for willful neglect and in cases where the student's class grades are so low that further class attendance would be a waste of time. No suspension shall become effective until approved by the dean of the college or school.

Probation, Suspension, Readmission, Expulsion Policy

Uniform Probation

Students with a cumulative grade point average below 2.0 may be subject to probation by the dean of their college or school. A unit may require a grade point average above 2.0 or other academic requirements for purposes of determining probation or meeting degree requirements. Students have the right to have the sanction of academic probation reviewed and explained by the academic official who imposed the sanction. Academic probation is not recorded on a student's permanent record and essentially constitutes a warning to the student of standards which must be met.

Uniform Academic Suspension Regulations

The student whose cumulative GPA exceeds the "allowable grade point deficiency" (see table on page 44) is subject to suspension at any time. Normally, students are suspended at the end of a semester or summer school session. Deans have the authority to waive suspension in favor of probation if in their judgment the circumstances of individual cases so warrant. The suspension rule will be set aside only under extraordinary conditions.

Academic suspension identifies the status of a student who has failed to meet the University minimum standards and who has been notified formally by the dean of the college or school of academic suspension. Suspension from the University means that a student will not be permitted to register for any classes, including those in summer sessions, offered by the University for academic credit until the student has been officially reinstated. The normal period of suspension is a minimum of one academic semester but will not exceed one calendar year from the date of a student's first suspension. A student who has been suspended for academic deficiencies and who takes courses at other institutions during the period of suspension cannot automatically transfer such credit toward a degree at WVU

upon readmission to the University. Students are not eligible for readmission if they earn less than a 2.0 at other institutions while on suspension from WVU.

After one semester of satisfactory performance (C average or better on a minimum of 12 credit hours earned during a regular semester or during the summer sessions) the appropriate transfer credit will be entered into the student's record upon certification by the advisor and dean that the above conditions have been met. A student who has preregistered and is subsequently suspended shall have his or her registration automatically cancelled.

Reinstatement After Suspension

During the semester immediately following the effective date of suspension, suspended students may petition in writing for reinstatement. The college or school petitioned shall establish the terms of reinstatement for successful student petitions. After one calendar year from the effective date of suspension, any student who has been suspended one time shall, upon written application, be reinstated to the University and to the college or school in which the student was previously enrolled, unless the student petitions for admission to another college or school. The college which reinstates the student removes the student's suspension restriction in Admissions and Records and accepts the student.

A suspended student who is reinstated under the provisions above will be placed on academic probation and will be subject to the maximum grade point deficiency regulations as before, unless the terms of probation agreed to by the student and that college stipulate otherwise. Each college or school shall have the right to establish requirements or performance expectations.

After the second or any subsequent suspension, a student may be reinstated to the University provided that a college or school agrees to reinstate the student. After a student has been reinstated, he or she must apply for readmission through the Office of Admissions and Records.

Maximum Allowable Grade Point Deficiency*

Total Hours Attempted**	Maximum Grade Point Deficiency**	Total Hours Attempted**	Maximum Grade Point Deficiency**
10-19	20	55-59	12
20-24	19	60-64	11
25-29	18	65-69	10
30-34	17	70-74	9
35-39	16	75-79	8
40-44	15	80-84	7
45-49	14	85 or more	6
50-54	13		

*The grade point deficiency is the difference between the number of grade points needed for a 2.0 average and the number of grade points that a student has actually earned in all courses attempted.

**Includes all hours attempted in institutions in the West Virginia system of higher education, excluding grades of P and exclusive of the D/F Repeat Policy.

Appeal of Suspension

Imposition of academic suspension based on grade point average, failure to meet the conditions previously specified for removal of academic probation, or failure to meet the conditions of admission, may be appealed under the following conditions:

- The student may appeal individual final course grades and, if successful, may be reinstated.
- The student may make an appeal to the appropriate dean based on erroneous calculation of the grade point average or on erroneous calculation of the time period within which a grade point average must be achieved. The decision of the dean, as the president's designee, is final.

Students have the right to appeal academic suspensions based on requirements or standards other than grades or grade point average which they believe reflect capricious, arbitrary, or prejudiced academic evaluation, or reflect discrimination based on race or color, sex, sexual orientation, veteran status, religion, age, disability, national origin, creed, ancestry, or political affiliation. At the dean's discretion, suspensions may remain in effect until appeal procedures are completed.

Step 1. The student shall discuss the complaint with the dean involved within 30 calendar days of the action taken. If the two parties are unable to resolve the matter satisfactorily within 15 calendar days, the student may proceed to Step 2.

Step 2. The student must prepare and sign a document which states the facts constituting the basis for the appeal. A copy of this document shall be given to the University Committee on Student Rights and Responsibilities. Within 15 calendar days of receipt of the appeal, the University Committee on Student Rights and Responsibilities will arrange a hearing using the following procedures:

1. All parties involved shall receive written notice of the date, time, and place of the hearing.
2. The student may be advised by a person of his or her choice from within the institution; likewise, the academic officer recommending suspension may have an advisor from within the institution. Such advisors may consult with but may not speak on behalf of their advisees or otherwise participate.
3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.
4. Witnesses may be called by any of the parties involved.
5. A record of the appeal shall be prepared in the form of summary minutes and relevant attachments and will be provided to any of the parties involved upon written request.

The decision of the University Committee on Student Rights and Responsibilities will be sent to the dean involved and the student within seven calendar days of the hearing. If the decision requires a reinstatement, the dean will take action in accordance with the committee's decision. If the decision of the committee is to uphold the suspension, the student's appeal must reach the appropriate vice president within 30 calendar days of receipt of the committee decision. The vice president will review and make a decision regarding the suspension within 15 calendar days of receiving the student's appeal. The decision of the vice president, as the president's designee, is final.

Uniform Academic Dismissal Regulations

Academic dismissal from the University means that a student will not be permitted to register for any classes, including those in summer sessions, offered by the University. Academic dismissal can result from repeated failure to make academic progress and/or to meet probationary terms set forth in writing by the student's college or school.

After five calendar years from the effective date of academic dismissal, any student who has been dismissed shall, upon written application, be considered for reinstatement to the University, with the terms of reinstatement to be established by the college or school entered. Failure to meet these terms will result in permanent academic expulsion.

Appeal of Dismissal—Failure to Meet Academic Standards

The procedures and appeals described here do not apply to dismissal as a sanction for academic dishonesty. The time limitations stated herein are suggested in order to render a decision as expeditiously as possible. In the case of University holidays or absence of person(s) involved, reasonable delays may be expected.

A decision to dismiss a student for failure to meet academic standards (as distinguished from academic dishonesty) can be made only after the student has been counseled by the appropriate departmental committee or representative, with counseling to take place as soon as possible after discovery of the problem. After the student is given a reasonable opportunity to correct deficiencies, there shall then be a formal review of the student's status by the appropriate departmental or program committee to determine whether the student shall be retained or dismissed. The student may provide the committee written documentation of his or her efforts to correct deficiencies.

A committee recommendation for dismissal, including any documentation provided by the student to the committee, shall be forwarded to the student's dean and to the student. Within 15 calendar days of receipt of the committee's recommendation, the dean shall inform the student and the student's department or program of his or her decision. A decision to dismiss shall specify whether the dismissal is from the program or college or school. The dean may also dismiss a student from the institution if the student does not meet institutional standards.

Step 1. The student shall prepare and sign a document which states the facts constituting the basis for the appeal. A copy of this document must reach the dean within 30 calendar days of receipt of written notice of dismissal. The student shall be given an opportunity to discuss the appeal with the dean at any time in Step 1. If the matter is not resolved satisfactorily within 15 calendar days of the dean's receipt of the student's appeal, the student may proceed to Step 2.

Step 2. The student will forward a copy of the appeal to the appropriate vice president within 15 calendar days of failure to resolve the matter at the dean's level. Prior to the decision of the vice president, the student will be given an opportunity to discuss the appeal with the vice president. The decision of the vice president, as the president's designee, shall be rendered within 15 days of receipt of the student's appeal and is final.

Appeal of Dismissal—Failure to Meet Academic Requirements or Performance Standards

Dismissal, based on failure to meet academic requirements or performance standards irrespective of grades or grade point average, from undergraduate programs, graduate programs, professional programs, and/or from the institution, may also be appealed. Students have the right to appeal academic dismissal based on requirements or standards other than grades or grade point average which they believe reflect capricious, arbitrary, or prejudiced academic evaluation, or reflect discrimination based on race or color, sex, sexual orientation, veteran status, religion, age, disability, national origin, creed, ancestry, or political affiliation.

Step 1. The student shall prepare and sign a document which states the facts constituting the basis for the appeal. A copy of this document must reach the dean within 30 calendar days of receipt of written notice of dismissal. The student shall be given an opportunity to discuss the appeal with the dean at any time in Step 1. If the matter is not resolved satisfactorily within 15 calendar days of the dean's receipt of the student's appeal, the student may proceed to Step 2.

Step 2. The student will forward a copy of the appeal to the University Committee on Student Rights and Responsibilities, which, within 15 calendar days of receipt of the student's appeal, will arrange a hearing using the following procedures:

1. All parties involved shall receive written notice of date, time, and place of hearing.
2. The student may be advised by a person of his or her choice from the institution; likewise, the academic officer recommending academic dismissal may have an advisor from the institution. Such advisors may consult with but may not speak on behalf of their advisees or otherwise participate directly in the proceedings unless they are given specific permission by the University Committee on Student Rights and Responsibilities chairperson.
3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.
4. Witnesses may be called by any of the parties involved.
5. A record of the appeal shall be prepared in the form of summary minutes and relevant attachments and will be provided to any of the parties involved upon written request.

The University Committee on Student Rights and Responsibilities will reach a decision within seven days. The committee's recommendation for dismissal must be reviewed by the appropriate vice president, who may confirm or remand the recommendation with specific instructions. Prior to the decision of the vice president, the student will be given an opportunity to discuss the appeal with the vice president. Within 15 calendar days of a recommendation for dismissal confirmed by the vice president, the student may appeal to the president. The decision of the president is final.

Academic Integrity and Dishonesty

The academic development of students and the overall integrity of the institution are primary responsibilities of WVU. Academic dishonesty is condemned at all levels of life, indicating an inability to meet and face issues and creating an atmosphere of mistrust, disrespect, and insecurity. In addition, it is essential in an academic community that grades accurately reflect the attainment of the individual student. Faculty, students, and administrators have shared responsibilities in maintaining the academic integrity essential for the University to accomplish its mission.

Responsibilities

Students should act to prevent opportunities for academic dishonesty to occur, and in such a manner to discourage any type of academic dishonesty. Faculty members are expected to remove opportunities for cheating, whether related to test construction, test confidentiality, test administration, or test grading. This same professional care should be exercised with regard to oral and written reports, laboratory assignments, and grade books.

Deans and department chairpersons are expected to acquaint all faculty with expected professional behavior regarding academic integrity, and to continue to remind them of their responsibility. Deans and department chairpersons shall assist faculty members and students in handling first-offense cheating allegations at the lowest possible level in the University, and with discretion to prevent damage to the reputation of any person who has not been found guilty in the prescribed manner.

Each member of the teaching faculty and all other WVU employees, including but not limited to assistants, proctors, office personnel, custodians, and public safety officers, shall promptly report each known case of academic dishonesty to the appropriate supervisor, department chairperson, or dean of the college or school concerned, and to the Office of Judicial Programs, Office of Student Life.

Academic Dishonesty Defined

WVU expects that every member of its academic community shares the historic and traditional commitment to honesty, integrity, and the search for truth. Academic dishonesty is defined to include but is not limited to any of the following:

1. **Plagiarism** is defined in terms of proscribed acts. Students are expected to understand that such practices constitute academic dishonesty regardless of motive. Those who deny deceitful intent, claim not to have known that the act constituted plagiarism, or maintain that what they did was inadvertent are nevertheless subject to penalties when plagiarism has been confirmed. Plagiarism includes, but is not limited to: submitting, without appropriate acknowledgment, a report, notebook, speech, outline, theme, thesis, dissertation, or other written, visual, or oral material that has been copied in whole or in part from the work of others, whether such source is published or not, including (but not limited to) another individual's academic composition, compilation, or other product, or commercially prepared paper.
2. **Cheating and dishonest practices** in connection with examinations, papers, and projects, including but not limited to:
    a. Obtaining help from another student during examinations.
    b. Knowingly giving help to another student during examinations, taking an examination or doing academic work for another student, or providing one's own work for another student to copy and submit as his or her own.
    c. The unauthorized use of notes, books, or other sources of information during examinations.
    d. Obtaining without authorization an examination or any part thereof.
3. **Forgery, misrepresentation, or fraud:**
    a. Forging or altering, or causing to be altered, the record of any grade in a grade book or other educational record.
    b. Use of University documents or instruments of identification with intent to defraud.
    c. Presenting false data or intentionally misrepresenting one's records for admission, registration, or withdrawal from the University or from a University course.

d. Knowingly presenting false data or intentionally misrepresenting one's records for personal gain.
e. Knowingly furnishing the results of research projects or experiments for the inclusion in another's work without proper citation.
f. Knowingly furnishing false statements in any University academic proceeding.

Procedure for Handling Academic Dishonesty Cases

Academic dishonesty includes plagiarism; cheating and dishonest practices in connection with examinations, papers, and projects; and forgery, misrepresentation, and fraud. Some cases of forgery, misrepresentation, or fraud which occur outside the context of courses or academic requirements may be referred directly to the University Committee on Student Rights and Responsibilities by any member of the University community. In such cases, the University Committee on Student Rights and Responsibilities will arrange a hearing following the procedure outlined in Step 3 within 15 calendar days of receipt of the charges.

Step 1. Instructor's Level

1. **Instructor's Notice** An instructor who suspects a student of dishonest practices may meet with the student to discuss the evidence and may drop the matter without making a formal accusation and without imposing a penalty.

   An instructor may not find guilt or impose a penalty without a written charge that describes the evidence against the student. Within 15 calendar days of discovering clear evidence of an offense, an instructor who wishes to charge a student with academic dishonesty must *personally deliver written notice of the charges or send the notice by certified U.S. mail to the student's local and permanent addresses.*
2. **Student's Response** A student who elects to respond must do so in writing no later than 15 calendar days after the mailing or personal delivery of the instructor's written notice. The student may respond by admitting or denying guilt, by offering counter evidence, or by describing extenuating or mitigating circumstances that might affect the instructor's judgement of the severity of the offense.
3. **Instructor's Decision** Within five calendar days of the student's response or after the opportunity for response has passed (whichever comes first), the instructor must reach a decision and send written notice of the decision to the student (and, if guilt is found, to others named below).
   a. **Charge withdrawn** An instructor who believes that the evidence is not sufficient to establish guilt should immediately notify the student of this decision in writing, thus closing the case.
   b. **Penalty imposed** An instructor who is convinced that the student is guilty and wishes to impose an academic penalty must summarize the evidence justifying the penalty in a written notice to the student. The notice must also inform the student of the right to petition the dean within 30 calendar days. Copies of the notice must be sent to the dean of college or school offering the course, the dean of the college or school in which the student is enrolled, and the Office of Judicial Programs. The maximum penalty an instructor may impose is an unforgivable F in the course. The Office of Judicial Programs will notify Admissions and Records to enter an unforgivable F, which cannot be removed from the student's transcript unless the decision is reversed. If the student repeats the course and a new grade is entered, the unforgivable F will still remain on the transcript.

   The instructor may exclude the student from further participation in the course, but is discouraged from doing so unless the student has admitted guilt in writing. The instructor may impose lesser penalties, including (but not limited to) a reduced grade on the work or examination in question, assignment of remedial work, or a reduced grade (including a forgivable F). The instructor may also recommend to the dean of the college offering the course that additional penalties be imposed.

Step 2. Dean's Level

A student may petition the dean on two grounds, which may be presented at the same time or separately within the 30-day time limit. A student may (I) ask the dean to review the conduct of the case for adherence to correct procedures; (II) challenge the finding of guilt or the severity of the penalty; or (III) do both.

1. **Procedural Review** A student who believes that the instructor failed to follow correct procedures at Step I may petition the dean of the college or school in which the course is offered to conduct a review of the procedures. The student must submit the petition in writing, specifying the procedural errors, within 30 days of the instructor's written notice.

   Within 15 calendar days of receiving the student's petition, the dean or the dean's designee must:

   a. Notify the instructor that a procedural review is being conducted at the student's request and give the instructor an opportunity to reply.
   b. Decide, after reviewing the available information, whether any procedural errors were made and whether such errors affected the outcome of the case.
   c. Send written notice of the decision and its rationale to the student, instructor, and dean of the college in which the student is enrolled, and the Office of Judicial Programs.

      A dean or dean's designee who decides that the outcome was affected may (I) direct the instructor to reopen the case and to correct the error(s) within a specified period of time or (II) overturn the instructor's decision and nullify the penalty, in which case the dean must see that the student's record is amended. If the dean or dean's designee decides that the outcome was not affected, the instructor's decision stands.

2. **Appeal** A student who wishes to challenge the instructor's finding of guilt or the severity of the penalty may appeal to the dean of the college or school in which the course is offered. The appeal must (I) be made in writing within 30 calendar days of the instructor's written notice; (II) state specific grounds for any claim that the finding of guilt was unwarranted or the penalty unjust; and (III) specify the desired remedy.

   Within 15 calendar days of receiving the student's appeal the dean or dean's designee must:

   a. Notify the instructor that the student is appealing and specify whether the finding of guilt, the severity of the penalty, or both will be reviewed.
   b. Solicit from the instructor and the student evidence and arguments relevant to the issues.
   c. Make this material available to both the student and the instructor.
   d. Arrange a meeting of the instructor, the student, and the dean or dean's designee. (A person from within the University may accompany the student to the meeting and may consult with the advise but not speak on behalf of the student or otherwise participate directly in the discussion unless given explicit permission by the dean or dean's designee.
   e. Decide, based on the available evidence, whether to uphold the decision being challenged.
   f. Send written notice of the decision, with summary minutes of the meeting and a rationale for the decision to the student, instructor, dean of the college or school in which the student is enrolled, and Office of Judicial Programs.
   g. See that the student's record is amended if necessary.

3. **Additional Penalties** The dean or dean's designee may impose penalties beyond those imposed by the instructor if the instructor recommends such action or if the dean's understanding of the case in the context of other misconduct by the student suggests that additional penalties are warranted. The dean or dean's designee may consider such action only after completing any procedural review or appeal requested by the student or after opportunities have passed for the student to initiate a review or appeal (that is, after it is clear that the instructor's decisions will stand). Within 15 calendar days of this time, the dean or dean's designee must::

a. Notify the student that additional penalties are being considered.
b. Give the student an opportunity to provide additional evidence or argument that might affect a decision about the appropriate penalty and to answer any questions by the dean or dean's designee.
c. Decide, based on the available evidence, whether to impose any additional penalties.
d. Send written notice of the decision, including a summary of the evidence of the decision, including a summary of the evidence and a rationale for the decision, to the student, instructor, dean of the college or school in which the student is enrolled, and Office of Judicial Programs.
e. See that the student's record is amended if necessary.

Step 3. University Committee Level

A student or instructor may petition the Committee on Students Rights and Responsibilities on two grounds, which may be presented at the same time or separately within 30 calendar days of receipt of the dean's decision. A petitioner may (I) ask the committee for a procedural review; (II) challenge decisions made at Step 2; or (III) do both. Those petitioning the committee must do so in writing through the Office of Judicial Programs.

1. **Procedural Review** The student or the instructor may ask the committee to conduct its own review of the procedures followed in Steps 1 and 2.
   a. The petition must (I) name the dean or instructor who is believed to have made the error(s); (II) describe the alleged procedural error(s); (III) specify how the error(s) affected the outcome of the case or otherwise harmed the student or the cause of justice; and (IV) include copies of all documentation and correspondence about the case.
   b. On receipt of the petition, the committee chair, in consultation with the Office of Judicial Programs, will convene a panel of two faculty members and one student who will decide by majority vote whether to conduct the review. No member of this panel may serve on any other panel in connection with the same case. If the panel denies the petition, the procedural case is closed when written notice of the denial and its rationale has been sent to the student, instructor, dean of the college or school offering the course, dean of the college or school in which the student is enrolled, and the Office of Judicial Programs.

      If a majority of the panel agrees that a review is warranted, they must (I) give the student, instructor, and dean a reasonable opportunity to answer any questions the panel may have; (II) decide, based on a review of the available information whether any procedural errors were made and whether any such errors affected the outcome of the case; and (III) send written notice of the decision, with summary minutes of the meeting and a rationale for the decision to the student, instructor, deans of the college or school offering the course and the college or school in which the student is enrolled, and the Office of Judicial Programs.
   c. A panel that decides by majority vote that the outcome was affected by error(s) may (I) direct the dean or instructor to reopen the case and to correct the error(s) within a specified period of time or (II) overturn the finding of guilt and nullify the penalty. In either course of action, the panel must provide the rationale for the decision.
   d. The dean of the college or school offering the course must see that the student's record is amended if necessary.
2. **Appeal** The student or instructor may challenge the decision(s) of Step 2. (If the dean upheld the instructor's finding or penalty, then the student is appealing the instructor's decision, not the dean's.)
   a. The petition must (I) specify the decision being appealed; (II) name the person whose decision is being appealed; (III) specify grounds for any claim that the finding of guilt was unwarranted or the penalty unjust; (IV) specify the desired remedy; (V) provide additional evidence or line or argument not previously introduced that might affect the outcome of the case; (VI) include copies of all documentation and correspondence about the case.

b. On receipt of the appeal, the committee chair, in consultation with the Office of Judicial Programs, must convene a panel of three faculty and two student members, chaired by one of the faculty members. This panel may decide by majority vote whether to conduct a hearing. If the panel decides that no hearing is warranted, the appeal is denied and the case is closed when written notice of the denial, including the rationale, has been sent to the student, instructor, dean of the college in which the course is offered, dean of the college in which the student is enrolled, and the Office of Judicial Programs.

If the panel deems a hearing is warranted, the Office of Judicial Programs must, in a timely manner, arrange a hearing to accommodate the schedules of the student, instructor, and dean, as well as any other parties involved, all of whom must be notified in writing of the date, time, and place of the hearing, as described below.

I. The administrative procedure is not adversarial; the formal rules of evidence do not apply.
II. Witnesses may be called by any of those involved.
III. The person bringing the appeal and the person whose decision is under appeal may be accompanied by an advisor from within the University who may consult with but not speak on behalf of the advisee or otherwise participate directly in the proceedings unless given explicit permission by the chair of the panel.
IV. A written record of the hearing must be prepared in the form of summary minutes with relevant attachments and must be provided to those involved upon written request. In addition, a tape recording of the hearing must be made a part of the permanent record.
V. Within seven calendar days of the hearing the panel must decide by majority vote, based on the available evidence whether to uphold the decision(s) under appeal and must send written notice of the decision, specifying the numerical vote, to the student, instructor, dean of the college or school offering the courses, dean of the college or school in which the student is enrolled, and Office of Judicial Programs. The dean of the college offering the course must see that the student's record is amended if necessary.
VI. If the panel overturns the decision(s) of Step 2, whether by charging the finding of guilt or by imposing, reinstating, or modifying a penalty, the panel's notice must summarize the evidence they considered and provide a rationale for the decision.
VII. In an appeal by a student, the panel may not impose a penalty more severe than that imposed or upheld by the dean at Step 2; in an appeal by an instructor, the panel may not impose a penalty more severe than that imposed by the instructor at Step 1.

Step 4. President's Level

The student or the instructor may appeal decisions of the University Committee on Student Rights and Responsibilities to the president or president' designee. Such appeals must (I) be made in writing within 30 calendar days of notice of the decision of the Committee on Student Rights and Responsibilities; (II) state specific grounds for any claim that the committee's decision was faculty or unjust; and (III) specify the desired remedy. On receipt of the appeal, the president or president's designee will decide whether or not to hear the appeal. The decision of the president or of the president's designee is final.

Fees

Regulations

All West Virginia University fees are subject to change. All fees are due and payable to the Office of Student Accounts prior to the start of classes. Arrangements with the Office of Student Accounts for payment from officially accepted scholarships, loan funds, grants, or contracts must be completed prior to the start of classes.

All students are expected to register on days set apart for registration at the beginning of each semester or summer session of the University. No student will be permitted to register at the University after the eighth day of a semester or the fourth calendar day of the summer sessions or a single summer session. Days are counted from the first day of registration. Any student failing to complete registration on regular registration days is subject to a late registration fee of $40.

Registering students pay the fees shown in the fee charts, plus special fees and deposits as required.

No degree is conferred upon any candidate and no transcripts are issued to any student before payment is made of all tuition, fees, and other indebtedness to any unit of the University.

It is the policy of WVU to place on restriction students who have outstanding debts to a unit or units of the University. The restriction may include, but is not limited to, the withholding of a student's registration, diploma, or transcript.

Financial Aid

Students interested in applying for financial aid need to complete a Free Application for Federal Student Aid (FAFSA). This form is the application for all major federal student aid programs and must be received at the federal processing center by March 1 for applicants to receive maximum consideration.

For the summer session(s) a separate WVU Financial Aid Application is also required. Forms are available in the Financial Aid Offices in the Mountainlair, the Health Sciences Center, and the College of Law.

Students can complete a FAFSA on the Internet at www.fafsa.ed.gov. Instructions are available at University libraries, computer labs, and in the Financial Aid Offices.

For those students who filed a FAFSA for the previous year, a renewal application may be used. Renewal FAFSAs are mailed to students' home addresses to arrive by mid-January. Students who do not receive a renewal FAFSA by that time should contact the Financial Aid Office for a regular FAFSA or file by using the web address above.

Fees for Extended Learning Courses

Fees for credit hours for off-campus courses are the same as those charged students enrolled in on-campus courses. Extended learning students do not pay the *Daily Athenaeum* Fee, the Radio Station Fee, or the Mountainlair Construction Fee. However, all students must pay $33 per credit hour plus a technology fee and library fee per credit hour for each extended learning course taken.

Laboratory Fees

Laboratory fees will be assessed to all students, full-time or part-time, undergraduate or graduate, for each lab section enrolled. Some departments may also have additional fees or rental fees.

Music Fees

Practice Room Fee All music majors must pay a fee of $15 per semester, which entitles them to assigned practice space for one hour per day. Additional space may be available at the rate of $4 per hour.

Instrument Rental $15 per semester.

Special Fees

Application for Undergraduate Admission	
(Resident)	$25.00
(Non-resident)	40.00
Application for Admission (Dentistry and Medicine)	50.00
Application for Admission (College of Law or Graduate Studies)	50.00
Diploma Replacement	35.00
Examination for Advanced Standing	50.00
Graduation	30.00
(Payable by all students at the beginning of the semester or session in which they expect to receive their degrees.)	
Late Registration Payment	40.00
(Not charged to students who complete registration during the regular registration days set forth in the University calendar.)	
Reinstatement of Student Dropped from the Rolls	40.00
Student Identification Card Replacement	20.00
Student Identification Card Replacement (damaged card)	10.00
Official Transcript	6.00
Official Letter	6.00
Statement of Degree Letter, Grade Point Average Letter	6.00
Priority Service (Transcript/Letter)	10.00

Summer Tuition and Fees

Undergraduate Students	*Resident*	*Non-resident*
Tuition, per semester hour	$94.00	$363.00
Daily Athenaeum Fee*	7.00	7.00
Radio Station Fee*	5.00	5.00
Health, Counseling, and Program Services Fee	128.00	128.00
Mountainlair Construction Fee, per six-week summer session or any portion thereof*	66.00	66.00
Student Affairs Fee*	40.00	40.00
Transportation Fee*	63.00	63.00
Athletic Fee*	55.00	55.00
Recreation Fee*	90.00	90.00
Technology Fee*	3.00	3.00
Library Fee*	2.00	2.00

*These fees are pro-rated per credit hours.

Non-Sufficient Funds Check Policy and Service Charge

Payments of tuition, fees, and other charges by check, draft, or order are subject to WVU's Non-Sufficient Funds Check Policy. A copy of the policy is available in the Bursar's Office. A service charge of $15 is collected on each check returned unpaid by the bank upon which it was drawn. Service charge on unpaid, returned checks is subject to change in accordance with state law.

Refund of Fees

A student who officially withdraws from the University or goes from full-time to part-time status within the refund period is eligible for a refund of tuition and fees. Every effort is made to process refunds within 30 days.

To withdraw from the University officially and receive a refund, a student must apply at the Office Admissions and Records. Tuition, special fees, the optional health service fee, and certain miscellaneous fees are refundable based upon the date of withdrawal and student status.* Lab fees are refundable during the first week of classes only, based upon student status.* Miscellaneous fees that are *not refundable* include the application fee, transcript fee, graduation fee (if graduating), late registration/payment fee, and reinstatement fee.

Exceptions Students entering the armed services of the United States may be granted full refund of refundable fees (but no course credit) if the call comes before the end of the first three-fourths of the semester. If the call comes after that, full credit for courses may be granted if the student has passing grades at the time of departure.

Students withdrawn due to catastrophic illness or death will be provided a refund as approved by the dean of Student Life or his or her designee.

If a student drops below full-time status (12 hours for undergraduates or nine for graduates), tuition, special, and certain miscellaneous fees are refundable based upon the date of the course drops. The optional health fee, application fee, transcript fee, graduation fee, late registration/payment fee, and reinstatement fee are not refundable.

Refund Schedules

Fall and Spring Semesters

Refund Period		Refund Period	
1st Week	90%	9th Week	—
2nd Week	90%	10th Week	—
3rd Week	70%	11th Week	—
4th Week	70%	12th Week	—
5th Week	50%	13th Week	—
6th Week	50%	14th Week	—
7th Week	—	15th Week	—
8th Week	—	16th Week	—

Refunds for summer sessions are published in their respective *Schedule of Courses.*

***Note:** If you withdraw and are receiving federal financial aid, it is possible that you may have to repay all or a portion of the federal funds received. Please check with the Financial Aid Office for more details.

Cost of an Academic Year's Work

The Student Financial Aid Office estimates that the total cost of attending WVU for a nine-month academic year is $11,804 for single West Virginia residents living on campus, $11,822 for single West Virginia residents living off campus, and $8,251 for those living at home. The total cost for single non-residents living on campus is $18,274; for single non-residents living off campus, $18,292; and for non-residents living at home, $14,721. These typical estimated student budgets include tuition and fees, books and supplies, room, board, transportation, and personal expenses to provide a modest but adequate lifestyle.

Identification Card

An identification card is issued to each full-time student when fees are paid in full. Certain part-time students can be eligible for an identification card when the appropriate fees are paid. It admits the owner to certain University athletic events, various activities of student administration, Health Service, and Mountainlair. Confiscation will result from misuse. The University reserves the right to refuse reissuance of an identification card.

Residency Policy

Section 1 of this policy bulletin contains general information regarding its scope and dates of adoption.

Section 2. Classification for Admission and Fee Purposes

2.1 Students enrolling in a West Virginia public institution of higher education shall be assigned a residency status for admission, tuition, and fee purposes by the institutional officer designated by the president. In determining residency classification, the issue is essentially one of domicile. In general, the domicile of a person is that person's true, fixed, permanent home and place of habitation. The decision shall be based upon information furnished by the student and all other relevant information. The designated officer is authorized to require such written documents, affidavits, verifications, or other evidence as is deemed necessary to establish the domicile of a student. The burden of establishing domicile for admission, tuition, and fee purposes is upon the student.

2.2 If there is a question as to domicile, the matter must be brought to the attention of the designated officer at least two weeks prior to the deadline for the payment of tuition and fees. Any student found to have made a false or misleading statement concerning domicile shall be subject to institutional disciplinary action and will be charged the nonresident fees for each academic term theretofore attended.

2.3 The previous determination of a student's domiciliary status by one institution is not conclusive or binding when subsequently considered by another institution; however, assuming no change of facts, the prior judgment should be given strong consideration in the interest of consistency. Out-of-state students being assessed resident tuition and fees as a result of a reciprocity agreement may not transfer said reciprocity status to another public institution in West Virginia.

Section 3. Residence Determined by Domicile

3.1 Domicile within the state means adoption of the state as the fixed permanent home and involves personal presence within the state with no intent on the part of the applicant or, in the case of a dependent student, the applicant's parent(s) to return to another state or country. Residing with relatives (other than parent(s)/legal guardian) does not, in and of itself, cause the student to attain domicile in this state for admission or fee payment purposes. West Virginia domicile may be established upon the completion of at least twelve months of continued presence within the state prior to the date of registration, provided that such twelve months' presence is not primarily for the purpose of attendance at any institution of higher education in West Virginia.

3.2 Establishment of West Virginia domicile with less than twelve months' presence prior to the date of registration must be supported by evidence of positive and unequivocal action. In determining domicile, institutional officials should give consideration to such factors as the ownership or lease of a permanently occupied home in West Virginia, full-time employment within the state, paying West Virginia property tax, filing West Virginia income tax returns, registering of motor vehicles in West Virginia, possessing a valid West Virginia driver's license, and marriage to a person already domiciled in West Virginia. Proof of a number of these actions shall be considered only as evidence which may be used in determining whether or not a domicile has been established.

3.3 Factors militating against the establishment of West Virginia domicile might include such considerations as the student not being self-supporting, being claimed as a dependent on federal or state income tax returns or the parents' health insurance policy if the parents reside out of state, receiving financial assistance from state student aid programs in other states, and leaving the state when school is not in session. *(continued on page 58).*

Estimated Expenses for Undergraduate Health Sciences Center Programs

Note: tuition and registration costs are per semester; other costs are per year.
All fees are subject to change without notice. These fees are accurate as of March 1, 2003.
Call the Office of Admissions and Records for current fees.

School and Division	Tuition and Registration*		Instruments	Lab coats, Uniforms, etc.	Books	TOTALS	
Dentistry	Resident	Non-resident				Resident	Non-resident
Dental Hygiene							
Freshman	$1,965.00	$5,872.00	$ ———	$ 145.00	$850.00	$2,960.00	$6,867.00
Sophomore	1,965.00	5,872.00	1,860.00	55.00	500.00	4,380.00	8,827.00
Junior	1,965.00	5,872.00	800.00	205.00	500.00	3,470.00	7,377.00
Senior	1,965.00	5,872.00	330.00	1,615.00	400.00	4,310.00	8,217.00
Medicine							
Medical Technology							
Junior	1,965.00	5,872.00	———	———	550.00	2,515.00	6,422.00
Summer	376.00	796.00	———	300.00	———	676.00	1,096.00
Senior	1,965.00	5,872.00	———	———	180.00	2,145.00	6,052.00
Physical Therapy*							
First Year	1,965.00	5,872.00	100.00	———	900.00	2,965.00	6,872.00
Summer	376.00	796.00	———	325.00	———	701.00	1,121.00
Second Year	1,965.00	5,872.00	———	230.00	900.00	3,095.00	7,002.00
Summer	564.00	1,194.00	———	———	———	564.00	1,194.00
Third Year	2,162.00	6,117.00	———	230.00	650.00	3,042.00	6,997.00
Summer	786.00	1,668.00	———	———		786.00	1,668.00
Occupational Therapy*							
Summer	470.00	995.00	25.00	100.00	150.00	745.00	1,270.00
Year One	1,965.00	5,872.00	150.00	100.00	1,100.00	3,315.00	7,222.00
Year Two	1,965.00	5,872.00	150.00	———	950.00	3,065.00	6,927.00
Summer	786.00	1,668.00	———	———	———	786.00	1,668.00
Year Three	2,162.00	6,117.00	150.00	———	350.00	2,662.00	6,617.00
Nursing							
Sophomore	1,965.00	5,872.00	77.00	257.00	769.00	3,068.00	6,975.00
Junior	1,965.00	5,872.00	———	52.00	308.00	2,325.00	6,232.00
Senior	1,965.00	5,872.00	———	———	308.00	2,273.00	6,180.00

***Note:** Physical Therapy and Occupational Therapy students have additional Notebook Computer Lease Fee of $1500.00 and Computer Software Fee of $200.00 per year.

Semester Fees in Colleges and Schools

All fees are subject to change without notice.

These fees are accurate as of March 1, 2003.
You are advised to check with the Office of Admissions and Records for the current fee schedule.

Full-Time Undergraduate†

Fee	*Tuition*	*Registration*	*Higher Education Resources*	*Special Fees**	*Operations Fees*	*Faculty** Improvement*	*TOTAL***	*Part-Time†† per credit hr.*
Resident	$165.00	$50.00	$416.00	$519.00	$435.00	$35.00	$1620.00	$137.00
Non-resident	535.00	250.00	1360.00	519.00	2086.00	105.00	4855.00	406.00

Notes:

†A full-time undergraduate student is one who is registered for 12 or more semester hours each semester of the regular academic year or six or more semester hours during a six-week summer session.

††A part-time undergraduate student is one who is registered for fewer than 12 semester hours per semester during the regular academic year or for fewer than six semester hours during a six-week summer session.

*Includes Athletics Fee, $55.00; Student Affairs Fee, $40.00; *Daily Athenaeum* Fee, $7.00; Health Counseling and Program Services Fee, $128.00; Transportation Fee, $63.00; Radio Station Fee, $5.00; Mountainlair Fee, $66.00; Information Technology Fee, $40.00 Library Fee, $25.00; Recreation Fee, $90. These fees are prorated for part-time students.

**Faculty Improvement Fee is charged to all students and is prorated for part-time students.

Please refer to the *WVU Graduate Catalog* or *WVU Health Sciences Catalog* for fee information for the graduate and professional levels.

Section 4. Dependency Status

4.1 A dependent student is one who is listed as a dependent on the federal or state income tax return of his or her parent(s) or legal guardian or who receives major financial support from that person. Such a student maintains the same domicile as that of the parent(s) or legal guardian. In the event the parents are divorced or legally separated, the dependent student takes the domicile of the parent with whom he or she lives or to whom he or she has been assigned by court order. However, a dependent student who enrolls and is properly classified as an in-state student maintains that classification as long as the enrollment is continuous and that student does not attain independence and establish domicile in another state.

4.2 A non-resident student who becomes independent while a student at an institution of higher education in West Virginia does not, by reason of such independence alone, attain domicile in this state for admission or fee payment purposes.

Section 5. Change of Residence

5.1 A person who has been classified as an out-of-state student and who seeks resident status in West Virginia must assume the burden of providing conclusive evidence that he or she has established domicile in West Virginia with the intention of making the permanent home in this state. The intent to remain indefinitely in West Virginia is evidenced not only by a person's statements, but also by that person's actions. In making a determination regarding a request for change in residency status, the designated institutional officer shall consider those actions referenced in Section 3. The change in classification, if deemed to be warranted, shall be effective for the academic term or semester next following the date of the application for reclassification.

Section 6. Military

6.1 An individual who is on full-time active military service in another state or foreign country or is an employee of the federal government shall be classified as an in-state student for the purpose of payment of tuition and fees, provided that the person established a domicile in West Virginia prior to entrance into federal service, entered the federal service from West Virginia, and has at no time while in federal service claimed or established a domicile in another state. Sworn statements attesting to these conditions may be required. The spouse and dependent children of such individuals shall also be classified as in-state students for tuition and fee purposes.

6.2 Persons assigned to full-time active military service in West Virginia and residing in the state shall be classified as in-state students for tuition and fee purposes. The spouse and dependent children of such individuals shall also be classified as in-state students for tuition and fee purposes.

Section 7. Aliens

7.1 An alien who is in the United States on a resident visa or who has filed a petition for naturalization in the naturalization court, and who has established a bona fide domicile in West Virginia as defined in Section 3, may be eligible for in-state residency classification, provided that person is in the state for purposes other than to attempt to qualify for residency status as a student. Political refugees admitted into the United States for an indefinite period of time and without restriction on the maintenance of a foreign domicile may be eligible for an in-state classification as defined in Section 3. Any person holding a student or other temporary visa cannot be classified as an in-state student.

Section 8. Former Domicile

8.1 A person who was formerly domiciled in the state of West Virginia and who would have been eligible for an in-state residency classification at the time of his or her departure from the state may be immediately eligible for classification as a West Virginia resident provided such person returns to West Virginia within a one-year period of time and satisfies the conditions of Section 3 regarding proof of domicile and intent to remain permanently in West Virginia.

Section 9. Residency Decisions/Appeals

Following is the process for initially determining residency for tuition purposes and how students appeal if they disagree with those decisions. Initial residency decisions are made at the admission level. Any questionable decisions are referred to the designated institutional official who determines whether the student meets the residency requirements or additional information is needed to make the decision. If additional information is needed, the student is requested to submit further documentation. If a student feels he or she has been improperly classified as a non-resident for tuition purposes, he or she should request an application for classification as a resident student at West Virginia University. To request this application write: Residency Officer, Office of Admissions and Records, P.O. Box 6009, Morgantown, WV 26506-6009, or call (304) 293-2121.

Once this application and supporting documents are received, a decision is made by the designated institutional official. If the student meets the requirements as outlined by the Board of Trustees Policy Bulletin #34, the student is granted residency for the upcoming semester. If the student does not meet the necessary requirements, the student is denied in-state residency. If denied, the student has the option of appealing the decision to the WVU Council on Residency. The council consists of faculty and student representatives, whose number shall be at least three. The student representative(s) shall be appointed by the president of West Virginia University Student Administration while the faculty representative(s) shall be selected by the University Faculty Senate. The student contesting a residency decision shall be given the opportunity to appear before the institutional committee on residency appeals.

If the council overturns the initial denial, the student becomes a resident for the semester in question. Should the council uphold the original denial, the student has the option of appealing to the president of WVU. The president, again, may either uphold the original denial or overturn the decision of the council.

Residency appeals shall end at the institutional level.

College of Business and Economics

Jay H. Coats, Ph.D., Dean
William S. Reece, Ph.D., Associate Dean for Academic Affairs
Tom S. Witt, Ph.D., Associate Dean for Research and Outreach
Susan R. Gustin, M.A., Assistant Dean for Student Affairs
C. G. Mancini, MPA, Assistant Dean for Finance and Administration
www.be.wvu.edu

Degrees Offered

Bachelor of Science in Business Administration
- ***Accounting***
- ***Management***
  - ***Organizational Leadership***
  - ***Management Information Systems***
- ***Finance***
- ***Marketing***

Bachelor of Science
- ***Economics***

Coordinated Dual Degrees in Business and Foreign Languages (BFL)

Historical Background

The College of Business and Economics was founded in November of 1951 and graduated its first class in the spring of 1953. Since that time, the college has become one of the largest colleges at West Virginia University. In 1954, the college became fully accredited by the Association to Advance Collegiate Schools of Business International (AACSB International), the highest level of business accreditation.

In 1990, the new College of Business and Economics building was completed on the site of old Mountaineer Stadium on the downtown campus adjacent to historic Woodburn Hall. The four-story facility houses modern classrooms, including three high technology distance-learning classrooms, two auditoriums, state-of-the-art computer laboratories, and space for the college's research and service centers.

Mission

The College of Business and Economics will meet the evolving needs of its constituencies through teaching, research, and service. We will achieve this in a globally focused, student-centered, technology-enabled environment.

Vision

The College of Business and Economcs will achieve its mission through the following activities:

- Creating a total academic environment for students to succeed;
- Fostering partnerships and collaborative relationships with public and private sectors to extend the reach and impact of our initiatives;
- Providing leadership to address the evolving needs of our constituents;
- Understanding and applying emerging technologies and their applications to decision-making, educational delivery, curriculum, and research methods;
- Integrating global education into the curriculum, making available international experiences, and fostering an environment that shows our global focus;
- Establishing a culture that encourages personal and professional growth and is attractive to highly valued faculty and staff;
- Conducting and communicating meaningful research to enhance the body of business and economic knowledge and to help decision makers;
- Expanding opportunities to generate external resources to increase self-reliance in supporting the attainment of our mission.

Statement of Quality

The faculty, staff, administrators, and student employees of the College of Business and Economics are committed to being responsive, sensitive, and understanding to the needs of the students and to the needs of each other. Our conduct shall be positive, professional, and supportive to all.

Accreditation

The business programs of the College of Business and Economics are accredited by Association to Advance Collegiate Schools of Business International (AACSB International) at the undergraduate and graduate levels. AACSB International accreditation assures students and prospective employers that our programs adhere to the highest standards of excellence in nationally recognized business programs. The college has maintained full accreditation in the AACSB International since 1954.

Honor Societies

Beta Gamma Sigma Honorary for B.S.B.Ad. Candidates of all majors.
Beta Alpha Psi for accounting majors.

Employment and Internships

The College of Business and Economics provides the opportunity for quality work experience through the Sydney V. Stern Office of Professional Development. Students can earn academic credit, practical experience, and income by participating in the college's internship program. Internships allow students to explore job options, refine career goals, enhance marketability, and network with professionals. A wide variety of internship opportunities are available and can be arranged in the spring, fall, or summer.

Possible projects include conducting audits, assisting with portfolio management and financial planning, managing accounts receivable and payable, learning the operations of a business by tagging along with management, directing fund-raising events or special promotions, developing and installing computerized inventory systems, troubleshooting problems in management information systems, training employees on computer applications, developing forecasting reports, recruiting and training employees, conducting market research, selling products, developing policy and procedure manuals, writing company newsletters, or compiling and producing leasing documents. Visit the Sydney V. Stern Office of Professional Development in the Edna and R. Emmett Lynch Advising Center for internship assistance, job search tools, and interviewing tips.

Technology

The array of technology available to students in the College of Business and Economics is impressive. Through coursework, students develop skills with technology and its application to business. Business students have access to standard and specialized business software, e-mail, and Internet services through two computer labs.

Students use the latest word processing, spreadsheet, database, and presentation software. The college encourages each student to buy a personal computer; special purchase and lease plans are available through the WVU Technology Service Center. A new wireless system provides local area network access from anywhere in the B&E Building to students with properly equipped laptop computers. In addition, the building houses two multimedia classrooms and three distance-learning sites.

Business and Economics Success Teams (BEST)

Upper-division business students who care about the success of pre-business and economics students can volunteer to become mentors in Business and Economics Success Teams (BEST). Their goal is to increase academic achievement and help freshmen and sophomores learn the ropes. Mentors are knowledgeable about WVU services, special programs, and professional activities.

Careers

Students seeking the B.S.B.Ad. degree must select a major. Career opportunities for each major are indicated in the description of the major in later sections. All majors emphasize scholarly and professional education rather than training for a first position.

Student Organizations

Student organizations include: Accounting Club; Alpha Kappa Psi; Beta Alpha Psi; Delta Sigma Pi; Economics Club; Finance and Banking Club; Industrial Relations Student Association; Marketing Club; MBA Association; MPA Association; MIS Association; Society for Human Resource Management; and Thompson's Economics Club.

Research Centers and Outreach Programs

Bureau of Business and Economic Research

Founded in 1948, the bureau conducts basic research relating to West Virginia's economic development. Active programs include: *West Virginia Economic Outlook* with short- and long-term forecasts of the state and its regional economies; special industry studies including energy, chemicals, tourism, and polymers; target industry and labor market studies; statewide and regional economic outlook and development conferences; comprehensive data profiles; and special studies for the executive and legislative branches of West Virginia government. The *West Virginia Business and Economic Review* is distributed quarterly to over 3,000 West Virginians. Undergraduate research assistants assist with many bureau studies. Seewww.bber.wvu.edu for details on the bureau.

Entrepreneurship Center

Initiated in 2000, the Entrepreneurship Center is the college's focal point for education, research, and outreach programs supporting entrepreneurial development in West Virginia. The center sponsors conferences, student and entrepreneurial organizations, internships, networking, and other activities. Students are actively involved in entrepreneurial startups, business plans, market studies, financing, and other critical areas essential to a successful start-up.

Executive Education

The Executive Education program has a wealth of experience in designing executive and leadership development programs to meet the needs of West Virginia businesses and organizations. The program uses college faculty augmented by outside experts to deliver high-quality programs using state-of-the-art technology.

Center for Chinese Business

The Center for Chinese Business provides management education, research, and business facilitation services focused on the emerging market economy in China. The goals of the center are to advance understanding between the business communities in China and the United States, to educate Chinese leaders on contemporary business and management practices in the U.S. and the global economy, and to increase exposure of U.S. and Chinese businesses to opportunities for mutually advantageous collaboration. In fulfilling its mission the center fosters the development of close relationships between and among academic communities and business and governmental entities in the U.S. and China. Special emphasis is placed on cultivating mutually beneficial ties between China and West Virginia.

Admission to the College

Admission for WVU Students in Morgantown and Regional Campuses

The College of Business and Economics welcomes applications for admission to its bachelor of science in business administration and bachelor of science in economics programs. Students must submit a formal application for admission. Applications may be

filed electronically or in person at the Edna & R. Emmett Lynch Office of Undergraduate Advising (room 358, B&E Building). Undergraduate students will be admitted to the college only in the fall and spring semesters. For fall admissions, the college accepts applications on the first day of spring semester classes through February 15th. Applications received after February 15th will be considered for the next application period. For spring admissions, the college accepts applications on the first day of fall semester classes through September 15th. Applications received after September 15th will be considered for the next application period. First semester WVU transfer students are exempt from the application deadlines.

To apply for admission to the College of Business and Economics, students must have completed **58 or more credit hours including the following courses** by the end of the current semester.

- Six hours of principles of accounting (ACCT 201 and 202) with a C grade or better.
- Six hours of principles of economics (ECON 201 and 202) with a C grade or better.
- Three hours of statistics (ECON 225) with a C grade or better.
- Three hours of college algebra (MATH 124) with a C grade or better and three hours of calculus (MATH 150) with a passing grade for the bachelor of science in business administration, or a grade of C or better for the bachelor of science in economics. MATH 129 with a C grade or better and MATH 155, or MATH 155 and MATH 156, can be used to satisfy the mathematics requirements.
- Six hours of composition and rhetoric (ENGL 101 and 102) with a passing grade.
- Four hours of computer applications (CS 101).

To apply, students must also have at least a 2.50 GPA. Students with cumulative GPAs at or above 2.50 will be considered by descending grade point average for admission into the college as space permits. Demand for entry into business programs is cyclical and recently competition has been especially keen. In recent semesters a grade point average substantially above 2.50 has been required for admission to the college. Students attending WVU in Morgantown or at the regional WVU campuses are welcome to apply for admission during the semester in which they will complete the above requirements. No student with a GPA below 2.5 will be admitted.

Admission for Transfer Students

Transfer students must have completed all course and grade requirements and must have GPAs at or above 2.50 to be eligible to apply for admission to the college. The college will admit eligible transfer students with grade point averages at or above the most recent cutoff GPA for on-campus applicants. For this purpose, the GPAs will be calculated using both WVU course work and all college-level work attempted at other institutions.

Pre-Business and Economics

High school students interested in professional careers in accounting, economics, finance, management, or marketing should seek admission into the pre-business and economics program through the Undergraduate Academic Services Center, located in the Student Services Center. Phone (304) 293-5805.

Prerequisites for Non-Business and Economics Students

To enroll in any upper-division, undergraduate business course, except the BUSA survey courses, non-business and economics undergraduate students must have attained a 2.5 or better GPA and completed six hours of principles of economics, six hours of accounting principles, three hours of statistics, and six hours of mathematics including three hours of calculus. In addition, students must have successfully completed six hours of composition and rhetoric, as well as four hours of computer applications.

Recommended Business Courses for Non-B&E Students

If you are a non-business student who wishes to obtain general knowledge about selected business topics and you do not meet the prerequisites for admission to upper-division business or economics courses or to the College of Business and Economics, please note that nine business and economics courses (27 hours) are available to you. For more information, read the course descriptions in this catalog.

These courses include the following:
ACCT 201 *Principles of Accounting* (PR: sophomore standing)
ACCT 202 *Principles of Accounting* (PR: ACCT 201)
ECON 201 *Principles of Economics* (PR: sophomore standing)
ECON 202 *Principles of Economics* (PR: ECON 201)
ECON 225 *Elementary B&E Statistics* (PR: sophomore standing, MATH 124, 126, or 129 with grade C or better)
BUSA 310 *Survey of Business Law* (PR: junior standing) Spring and Summer
BUSA 320 *Survey of Management* (PR: junior standing) Fall and Summer
BUSA 330 *Survey of Marketing* (PR: junior standing) Spring and Summer
BUSA 340 *Survey of Finance* (PR: junior standing) Fall and Summer

The business administration survey courses cannot be used as credit hours toward a business and economics degree. They also do not satisfy prerequisites for enrollment in any other upper-division business courses without successful passage of an equivalency examination and completion of the normal pre-business prerequisites.

Minor in Business Administration

Students outside of the College of Business and Economics may earn a minor in business administration by completing the following courses and meeting the requirements as stated below.

Course Requirements	Hrs.
ACCT 201	3
ACCT 202	3
ECON 201	3
ECON 202	3
BUSA 310 (Business Law)	3
BUSA 320 (Management)	3
BUSA 330 (Marketing)	3
BUSA 340 (Finance)	3
Total	**24**

- BUSA 320 and 340 are offered in fall and summer only. BUSA 310 and 330 are offered in spring and summer only.
- No substitutions are permitted for the above courses.
- To qualify for a minor in business a student must have earned a grade of C or better in each of the eight courses.
- This minor is not available to any student seeking a B.S. degree in the College of Business and Economics.

Work Taken at Other Institutions

Students seeking a degree from the College of Business and Economics and wishing to take work at other AACSB-accredited institutions must have their courses approved by the department chairperson and the dean of the college before registering at another institution. Ordinarily, required business courses must be taken at WVU.

Maximum and Minimum Load

A minimum of 12 hours in a semester is required for full-time status. The maximum load is 19 hours. Exceptions to the minimum or maximum load require approval of the Academic Standards Committee of the college before registration. Students seeking to withdraw from individual courses must petition the Academic Standards Committee whenever the remaining load falls below the required
minimum, even though all other conditions supporting the request for the individual course withdrawal may be in order.

Undergraduate Advising

Eligible students are admitted into the College of Business and Economics through the Edna and R. Emmett Lynch Undergraduate Advising Center, Room 358, Business and Economics Building; phone (304) 293-4959. Academic advisors assist all undergraduate business students with academic concerns. Course registration, graduation certification, and special requests are administered by this office. Any business student needing academic advising may make an appointment with an advisor in the center.

Requirements for Bachelor's Degrees

To qualify for either the bachelor of science in business administration or the bachelor of science in economics, each student must have the following:

- 128 semester hours of credit with a 2.0 grade point average (C) on all work attempted at WVU and state institutions under the jurisdiction of the West Virginia Higher Education Policy Commission.
- At least a 2.0 average on all business and economics coursework.
- An average of 2.0 (C) or better in coursework in his/her area of concentration (excludes required or elective courses in other disciplines in business or economics).
- At least 30 hours of credit in business and economics courses in residence after admission to the college.

All students must satisfy the University Liberal Studies Program requirements. Each student must complete 12 credits of Cluster A courses, 12 credits of University-approved Cluster B courses, and 11-12 credits of Cluster C courses. See the inventory of approved Liberal Studies Program courses on page 28.

Due to the globalization of the American economy, it is highly recommended that pre-business and economics students consider taking a minimum of six credit hours in a foreign language. These hours can be counted as part of Cluster A requirements. Many future jobs and careers may require some foreign language proficiency.

While the preceding constitute the general requirements of the bachelor's degrees of the College of Business and Economics, course requirements, specific grade requirements, and related academic requirements must be satisfied in one of the several major curricula of the College of Business and Economics.

Bachelor of Science in Business Administration

Admission to the bachelor of science in business administration degree program requires admission to the college. These requirements are indicated on previous pages. The requirements for the bachelor of science in business administration are:

- 56 hours outside business and economics.
- 6 hours of unrestricted courses in or out of the College of Business and Economics.
- 39 hours in the college's core courses in business and economics.
- 27 hours in an area of concentration (accounting, finance, business management, or marketing) and in electives in business and economics with a career emphasis. Degree requirements are presented in chart form in subsequent sections.

Since students interested in business careers matriculate in the pre-business and economics programs during their freshman and sophomore years, and since they transfer and matriculate in the College of Business and Economics in their junior and senior years, several critical curricular requirements are cited below.

University regulations limit full-time junior and senior students with a 2.0 GPA or higher to a maximum of four hours of pass/fail courses each semester or each summer session. Courses taken for pass/fail grading must be free electives and cannot exceed a total of 18 hours of credit. The college permits pass/fail grading in business and economics courses only in "free" electives and only where the student has met all requirements (including business and economics elective requirements) and only where the course is not necessary to fulfill the various program and 128-credit degree requirements.

Students majoring in any of the areas of business must average a 2.0 (C) or better in courses in their areas of concentration (excludes required or elective courses in other disciplines in business or economics).

A maximum of three credit-hours earned as a result of proctoring a self-paced undergraduate course, after entering the College of Business and Economics, may be applied towards the 128 credit-hours required for the B.S.B.Ad. degree.

Degree Requirements	**Hrs.**
Accounting, Finance, Business Management, and Marketing	
Non-B&E Courses (freshman and sophomore years)	
ENGL 101 and 102 *Composition and Rhetoric*	6
MATH 124 *Finite Mathematics* *	3
LSP Cluster A Courses: Electives	12
LSP Cluster B Courses:	
PSYC 101 *Introduction to Psychology*	3
SOCA 101 *Introduction to Sociology*	3
Other Cluster B Electives (non-economics)	6
LSP Cluster C Courses:	
MATH 150 *Introduction to Calculus**	3
CS 101 *Introduction to Computer Applications*	4
Other Cluster C Lab Science Elective (other than STAT 211)	4
Other Electives—non-Business and Economics	12
Subtotal	**56**
Unrestricted Electives Recommended for Juniors and Seniors (see major program requirements)	6

*The mathematics requirement for all students seeking admission as a business student to the college is the completion of MATH 124 *Finite Mathematics* with a grade of C or better and the completion of MATH 150 *Introduction to Calculus* with a passing grade. A grade of C or better in MATH 129 and a passing grade in MATH 155 or completion of MATH 155 and 156 would also meet the college's mathematics requirements.

Business Core Curriculum

All B.S.B.Ad. students must complete the 39 credit-hour business core curriculum. Fifteen hours of the core curriculum are taken in the sophomore year (ACCT 201 and 202; ECON 201, 202, and 225) and 24 hours are taken during the junior and senior years (BCOR 310, 315, 320, 330, 340, 350, 360, 370, 410, and 460). The BCOR courses provide an integrated and cross-functional introduction to the business disciplines and emphasize technology, teamwork and leadership skills, professional development, and communication skills.

All majors in business administration must complete a uniform body of core courses in business and economics, consisting of 39 credit hours.

Required College Core Courses	**Hrs.**
Sophomore year	
ACCT 201 and 202 *Principles*	6
ECON 201 and 202 *Principles*	6
ECON 225 *Elementary Business and Economics Statistics*	3
Junior year	
BCOR 310 *Professional Development I*	1
BCOR 315 *Professional Development II*	1
BCOR 320 *Legal Environment of Business*	3
BCOR 330 *Information Systems and Technology*	3
BCOR 340 *Business Finance*	3
BCOR 350 *Principles of Marketing*	3
BCOR 360 *Operations Management*	3
BCOR 370 *Managing Individuals and Teams*	3
Senior year	
BCOR 410 *Professional Development III*	1
BCOR 460 *Contemporary Business Strategy*	3
Subtotal	39
Courses in Major Field and Electives (junior and senior years)	27
Grand Total	**128**

Bachelor of Science in Economics

A knowledge of economics is essential for the understanding of a wide range of domestic and international issues. In economics courses the use of resources and the processes involved in production, distribution, and consumption of goods and services in the American and other economic systems are systematically studied. Undergraduate study in economics includes analysis of the development, organization, and functions of the economy. It involves analysis of the behavior of components of the economy such as households, businesses, and governments, as well as the pricing, development, and use of resources, and regional and community development.

The department offers courses designed to prepare the student for work in government and industry, for additional study in economics at the graduate level, and for professional studies in areas such as law, business administration, and public administration.

MATH 126 (or MATH 129) is acceptable in lieu of MATH 124. MATH 155 is acceptable in lieu of MATH 150. Students intending to go into graduate work in economics should take MATH 155 and MATH 156, and are encouraged to take additional mathematics courses.

Admission to the B.S. in economics degree program requires admission to the College of Business and Economics. These requirements are indicated on previous pages. In addition, admission to economics requires a grade of C or better in calculus. Upon admission to the college, students interested in the B.S. in economics degree should contact the department to request a faculty advisor.

Students who major in economics must complete 62 credit hours in non-economics and non-business courses. These shall consist of WVU Liberal Studies Program courses and elective courses.

Degree Requirements

Non-Business and Non-Economics Courses	**Hrs.**	**Totals**
ENG 101 and 102 *Composition and Rhetoric*	6	
LSP Cluster A Courses	12	
LSP Cluster B Courses (other than economics)	6	
LSP Cluster C Courses:		
CS 101 *Introduction to Computer Applications*	4	
Mathematics	6-8	
Other Cluster C Lab Science Elective	4	
Other Electives (non-Business and Economics)	22-24	
Subtotal		**62**
Unrestricted Electives		6
B.S. in Economics Required College Core Courses		
ACCT 201 and 202 *Principles*	6	
ECON 201 and 202 *Principles*	6	
ECON 225 *Elementary Business and Economics Statistics*	3	
ECON 301 *Intermediate Microeconomic Theory*	3	
ECON 302 *Intermediate Macroeconomic Theory*	3	
ECON 481 *American Economic History*	3	24
Elective Courses Required in the College		
Economics	15	
Business	9	
Economics or Business	12	36
Grand Total		**128**

Multiple and Concurrent Bachelor's Degrees

If a student seeks to earn two bachelor's degrees simultaneously and if one of the two is the bachelor of science in business administration or the bachelor of science in economics, the student must meet all requirements leading to the undergraduate degree offered by the College of Business and Economics.

The student must complete all University LSP requirements, all College of Business and Economics core requirements, and must satisfy the course requirements of one of the college's curricula. (See "Requirements for Degrees.") Students seeking to earn a bachelor of science in business administration or economics and another bachelor's degree simultaneously must earn a minimum of 158 hours including 30 hours as a resident of the college. In addition, students seeking the bachelor of science in business administration or the bachelor of science in economics and another degree simultaneously must meet all admission requirements in order to be enrolled in the college.

International Opportunities

The College of Business and Economics offers students opportunities to provide an international dimension to their B.S. degree studies by participating in programs that include travel to China, Cuba, or Italy.

The China program, coordinated by the college's Center for Chinese Business, offers a six-credit-hour program in international business with classes taught by WVU faculty on location in China. The program is offered Summer 1. Attending the classes also will be Chinese executives who provide a rich perspective on their own country. The program includes corporate visits to American and Chinese companies as well as sightseeing trips to Tiananmen Square, the Great Wall, and the Forbidden City. Besides tuition, students pay a fee to cover their airfare, accommodations, some meals, and other expenses.

The Cuba program is faculty-led and is coordinated by the college's director of the Division of Economics and Finance. The program consists of courses in the economics and history of Cuba. This six-credit-hour program includes a required trip to Cuba over Spring semester recess or Summer 1, depending on the term the program is offered. Students spend a week in Havana and hear lectures from University of Havana faculty about Cuba's economic and social history and the current economic situation. There are several field trips, including trips to a cooperative farm, government agencies, and foreign investment projects. Sightseeing activities are included. Besides tuition, students pay a fee to cover their airfare, accommodations, most meals, and other expenses.

The Italy program is somewhat different. WVU participates in a consortium along with 29 other AACSB-accredited business schools for the purpose of providing international study opportunities for their business students. The consortium's classes are held on a campus in Paderno del Grappa, Italy. Paderno is in northern Italy about 30 miles northwest of Venice. Students have the opportunity to attend either for a full semester or for a summer session. All classes are taught in English by faculty from the consortium universities with the students also being from the consortium member schools. Students who attend have the opportunity to take upper-division business classes as well as language and culture classes. Students pay tuition and fees as well as room and board to the consortium. The contact person for the Italy program is B&E's coordinator of international activities.

Coordinated Dual Degrees in Business and Foreign Languages

The coordinated dual degrees in business and foreign languages provide global career opportunities to students seeking both a bachelor of arts with a major in foreign languages and a bachelor of science in business administration. For details, see "Special Programs" in this catalog.

Accounting

Robert S. Maust, Division Director
Louis F. Tanner Distinguished Professor of Public Accounting
300 Business and Economics Building, (304) 293-7842

Degree Offered

Bachelor of Science in Business Administration

Objectives

Consistent with the mission of the college, the goal of the Division of Accounting is to meet the evolving needs of its constituencies through teaching, research, and service. This goal is to be accomplished in a globally focused, student-centered, technology-enabled environment. The degree program builds upon a general education curriculum to provide students with a base of academic knowledge in business and accounting. It is designed to integrate basic knowledge with a professional orientation and form a foundation for future learning as well as career and academic success. The program and course offerings are subject to periodic review for timeliness and relevance.

The advanced courses in the program provide both specialized knowledge in accounting and financial reporting and an integrated overview of the economic activities of a business entity. These courses give students the basic educational foundation required for a variety of entry-level positions in accounting, business, and financial management that lead to careers such as controllers, financial officers, certified public accountants, managerial accountants, internal auditors, tax accountants, public administrative officers, and other executives.

The accounting major is also designed to give students the basic educational background necessary to prepare for the professional examinations that may be required of them in their careers. These examinations include those needed to become a certified public accountant (CPA), certified management accountant (CMA), and certified internal auditor (CIA). Requirements to sit for the Uniform CPA Examination vary by jurisdiction. Many states, including West Virginia, require 150 semester hours of college credit to sit for the exam. The College of Business and Economics offers a master of professional accountancy (MPA) degree that meets this requirement while allowing students to earn a graduate degree.

In 1997, the accounting program received separate accreditation by AACSB International, the Association to Advance Collegiate Schools of Business. Only 159 programs have achieved this distinction. With a strong alumni network and a solid reputation among major accounting firms, the Division of Accounting at WVU has an excellent record of placing students in the profession.

Accounting Program Requirements

In order to be classified as an accounting major, a student must be admitted into the College of Business and Economics, have a grade of B or better in both Accounting 201 and 202, and pass a qualifying examination administered by the Department of Accounting. The accounting major is required to complete the following plan of study:

Degree Requirements	**Hrs.**	**Total**
Total Non-B&E Liberal Studies Program Requirements		56
Unrestricted Electives (in or out of College of B&E)		6
Required College Core Courses		39
Accounting Major Requirements		
ACCT 311 and 312 *Intermediate Accounting*	6	
ACCT 321 *Introduction to Accounting Systems*	3	
ACCT 322 *Accounting Systems*	3	
ACCT 431 *Cost Management*	3	
ACCT 441 *Income Tax Accounting*	3	
ACCT 451 *Auditing Theory*	3	

ACCT 461 *Accounting for Non Business Entities*
or ACCT 493 *Performance Measurements* 3
BLAW 420 *Law for the CPA* 3 27
Grand Total **128**

A grade of A or B in Accounting 201 is required of all students prior to registering for Accounting 311. A grade of C or better in Accounting 311 is required of all students prior to registering for Accounting 312. To be eligible for graduation, accounting majors must attain a GPA of 2.0 or better on all coursework taken in accounting.

Recommended Sequence of Courses

First Semester	Hrs.
ACCT 311	3
ACCT 321	3
BCOR 310	1
BCOR 315	1
BCOR 330	3
BCOR 340	3
BCOR 370	3
Total	**17**

Second Semester	Hrs.
ACCT 312	3
ACCT 322	3
BCOR 350	3
BCOR 360	3
Outside Elective	3
Total	**15**

Third Semester	Hrs.
ACCT 431	3
ACCT 441	3
BCOR 320	3
BCOR 410	1
Unrestricted Electives	3
Total	**13**

Fourth Semester	Hrs.
ACCT 451	3
ACCT 461 or 493	3
BCOR 460	3
BLAW 420	3
Unrestricted Electives	3
Total	**15**

Economics

William N. Trumbull, Ph.D., Division Director
419 Business and Economics Building, (304) 293-7860

Degree Offered

Bachelor of Science

Economics Program Objectives

In the broadest sense, economics is the science of decision-making. In economics, students learn how to identify the costs, benefits, and consequences of a decision. Government economists assess economic conditions in the U.S. and abroad and estimate the economic impact of specific changes in legislation or public policy. Economists in private industry work largely for marketing research firms, management consulting firms, banks, investment firms, and insurance companies. A degree in economics is also highly desirable for students who plan to attend graduate school or law school. The College of Business and Economics has an excellent record of placing economics students in both. Economics is an excellent major for anybody interested in a career in law, politics, business, foreign service, domestic government service, or banking.

Economics Program Requirements

Admission to the B.S. in economics degree program requires admission to the college. These requirements are indicated on previous pages. In addition, admission to economics requires a grade of C or better in calculus. Upon admission to the college, students interested in the B.S. in economics should contact the department to request a faculty advisor.

Students who major in economics must complete 62 credit hours in non-economics and non-business courses. These shall consist of WVU Liberal Studies Program courses and elective courses.

For graduation, economics majors must attain a minimum cumulative GPA of 2.0 for all economics courses, computed using the last grade earned in each economics course. Economics majors are required to have a grade of C or better in ECON 301 and 302.

Economics majors may take a maximum of nine of their 33 credit hours in economics out of residence. Transfer students must take a minimum of 15 credit hours of upper division economics in residence. The undergraduate advisor can waive this requirement under special circumstances.

Economics

Degree Requirements	**Hrs.**	**Total**
Non-Business and Non-Economics		
ENGL 101 and 102 *Composition and Rhetoric*	6	
LSP Cluster A Courses	12	
LSP Cluster B Courses (other than Economics)	6	
LSP Cluster C Courses		
CS 101 *Introduction to Computer Applications*	4	
Mathematics	6-8	
Other Cluster C Lab Science Elective	4	
Other Electives—Non-Business and Economics	22-24	
Sub-total Non-Business and Economics		**62**
Unrestricted Electives		6
Economics Required College Core Courses		
ACCT 201 and 202 *Principles of Accounting*	6	
ECON 201 and 202 *Principles of Economics*	6	
ECON 225 *Elementary Business and Economics Statistics*	3	
ECON 301 *Intermediate Microeconomic Theory*	3	
ECON 302 *Intermediate Macroeconomic Theory*	3	
ECON 481 *American Economic History*	3	24
Elective Courses Required in the College		
Economics	15	
Business	9	
Economics or Business	12	36
Grand Total		**128**

Recommended Sequence of Courses

First Semester	Hrs.
ECON 301	3
Economics Elective*	3
B&E Elective	3
Business Elective	3
Outside Elective	3
Total	**15**

Second Semester	Hrs.
ECON 302	3
Economics Elective	3
B&E Elective	3
Business Elective	3
Outside Elective	3
Total	**15**

Third Semester	Hrs.
Economics Elective**	3
Economics Elective	3
B&E Elective	3
Business Elective	3
Outside Elective	3
Total	**15**

Fourth Semester	Hrs.
Economics 481	3
Economics Elective**	3
B&E Elective	3
Outside Elective	3
Outside Elective	3
Total	**15**

*Most economics electives should not be taken until the student has completed ECON 301.
**Students interested in graduate work in economics should take ECON 421 and ECON 425.
Note: Economics majors should take 21 hours of B&E electives of which no more than 12 hours may be additional economics courses.

Finance

William N. Trumbull, Ph.D., Division Director
419 Business and Economics Building, (304) 293-7860

Degree Offered

Bachelor of Science in Business Administration

Finance Program Objectives

Finance is the study of the creation and management of wealth. A finance major learns how to evaluate and control risk. The finance program prepares students for a variety of positions in financial and non-financial enterprises. Career opportunities exist in commercial banking and financial institutions and in the regulatory agencies that oversee them. Additional opportunities exist in corporate finance including positions in financial analysis, cash management, and credit management. Investment-oriented students can explore opportunities in brokerage, bank trust, and institution portfolio management. People with degrees in finance have careers as commercial bankers, investment bankers, loan officers, financial analysts, insurance underwriters, stock brokers, institutional portfolio managers, credit managers, and insurance and risk managers.

Finance Program Requirements

In order to be classified as a finance major, a student must be admitted into the college and have a grade of B or better in both ECON 201 and 202.

Finance Program

Degree Requirements	**Hrs.**	**Totals**
Non-B&E Liberal Studies Program		56
Unrestricted Electives (in or out of B&E) see below		6
Required College Core Courses		39
FIN 305 *Intermediate Finance*	3	
FIN 310 *Investments*	3	
FIN 330 *Financial Institutions*	3	
FIN 350 *General Insurance*	3	
FIN 470 *Advanced Finance**	3	
FIN Electives (see below)	12	27
Grand Total		**128**

Recommended Sequence of Courses

First Semester	Hrs.
BCOR 310	1
BCOR 315	1
BCOR 330	3
BCOR 340	3
BCOR 370	3
FIN 330	3
FIN 350	3
Total	**17**

Second Semester	Hrs.
BCOR 350	3
BCOR 360	3
FIN 305	3
FIN 310	3
Outside Elective	3
Total	**15**

Third Semester	Hrs.
BCOR 320	3
BCOR 410	1
FIN Elective	3
FIN Elective	3
Outside Elective	3
Total	**13**

Fourth Semester	Hrs.
BCOR 460	3
FIN 470	3
FIN Elective	3
FIN Elective	3
Outside Elective	3
Total	**15**

* The prerequisite to FIN 470 is completion of 15 hours in finance, including FIN 305 (no exceptions). FIN 470 is to be taken during the final semester of the student's undergraduate program.

Management

Jack A. Fuller, Ph.D., Division Director
103 Business and Economics Building, (304) 293-7935

Degree Offered

Bachelor of Science in Business Administration

Management Program Objectives

Students majoring in management choose either the organizational leadership track or the management information system track. Each curriculum is career-oriented and makes extensive use of technology.

Management Organizational Leadership Objectives

The organizational leadership track provides the skill and knowledge for students who will assume leadership roles in business. This track would prepare them for various managerial positions (e.g., general manager, production manager, sales manager). Students who wish to focus on small business or entrepreneurship are able to do so by taking electives that allow them to develop those particular areas of expertise for various managerial positions (e.g., small business manager, entrepreneur, franchise owner). Students who wish to focus on human resource management are able to do so by taking electives that allow them to develop those particular areas of expertise for various managerial positions (e.g., compensation analyst, recruiter, training specialist, human resource manager).

Organizational Leadership

Degree Requirements	**Hrs.**	**Totals**
Non-B&E Liberal Studies Program Requirements		56
Unrestricted Electives (in or out of College of B&E)		6
Required College Core Courses		39
Required Courses in Option:		
ACCT 331 *Managerial Accounting*	3	
MANG 420 *Business Information Systems*	3	
MANG 422 *The Individual and the Organization*	3	
MANG 430 *Personnel Management*	3	
MANG 434 *Business Research Methods*	3	
MANG 493J *International Business*	3	
Business and Economics Electives	9	27
Grand Total		**128**

Recommended Sequence of Courses

First Semester	Hrs.
BCOR 310	1
BCOR 315	1
BCOR 320	3
BCOR 330	3
BCOR 350	3
BCOR 370	3
Total	**14**

Second Semester	Hrs.
BCOR 340	3
BCOR 360	3
MANG 422	3
B&E Elective	3
Outside Elective	3
Total	**15**

Third Semester	Hrs.
ACCT 331	3
BCOR 410	1
MANG 430	3
MANG 493J	3
B&E Elective	3
Outside Elective	3
Total	**16**

Fourth Semester	Hrs.
BCOR 460	3
MANG 420	3
MANG 434*	3
B&E Elective	3
Outside Elective	3
Total	**15**

*MANG 434, *Business Research Methods,* is offered in the Spring semester only.
Note: Students who are interested in human resource management are advised to select business and economics electives such as compensation, collective bargaining and labor relations, general insurance, employee benefit plans, employment law and labor economics.
Note: Students who are interested in entrepreneurship or small business management are advised to select business and economics electives such as practicum in small business, electronic commerce, entrepreneurship, employment law, and management of small business.

Management Information Systems Objectives

Management information system (MIS) managers focus on an organization's information systems and technology. The MIS option appeals to students who enjoy working with computers and problem solving. Computer technology is critical to the way today's organizations conduct business. There is a demand for workers who can manage a company's technical resources. MIS students learn to analyze business problems and to design, build, and maintain computer applications for solving those problems. This program provides students with the management skills for planning, budgeting, technology assessment, and cost/benefit analysis. People with degrees in management information systems have careers as information systems consultants, systems analysts, and information systems managers.

Management Information Systems

Degree Requirements	**Hrs.**	**Totals**
Non-B&E Liberal Studies Program Requirements		56
Unrestricted Electives (in or out of College of B&E)		6
Required College Core Courses		39
Required Courses in Option:		
ACCT 331 *Managerial Accounting*	3	
MANG 351 *Data Base Management Systems*	3	
MANG 352 *Business Applications Programming*	3	
MANG 422 *Individual & Organization*	3	
MANG 450 *Systems* Analysis	3	
MANG 452 *Systems Design and Development*	3	
MIS Elective	3	
Business and Economics Electives	6	27
Grand Total		**128**

Recommended Sequence of Courses

First Semester	Hrs.
BCOR 310	1
BCOR 315	1
BCOR 330	3
BCOR 350	3
BCOR 370	3
MANG 351 or MANG 352	3
Total	**14**

Second Semester	Hrs.
BCOR 320	3
BCOR 340	3
BCOR 360	3
MANG 351 or MANG 352	3
Outside Elective	3
Total	**15**

Third Semester	Hrs.
ACCT 331	3
BCOR 410	1
MANG 422	3
MANG 450	3
MIS Elective	3
B&E Elective	3
Total	**16**

Fourth Semester	Hrs.
BCOR 460	3
MANG 452	3
B&E Elective	3
Outside Elective	3
Total	**12**

Marketing

Jack A. Fuller, Ph.D. Division Director
103 Business and Economics Building, (304) 293-7935

Degree Offered

Bachelor of Science in Business Administration

Marketing Majors

Marketing professionals are involved in planning, promoting, selling, and distributing products and services. Sales and advertising are two common career tracks.

Additional opportunities include product management, global marketing, distribution, and marketing research. Marketing professionals are employed throughout the world by manufacturers, advertising agencies, retailers, consulting firms, product testing laboratories, business service firms, etc. The marketing program, by providing a broad working knowledge of the theory and practice of marketing, prepares students for a professional career or for graduate study. People with degrees in marketing have careers in: marketing research, marketing management, product management, distribution and logistics, retail management, marketing consulting, services marketing, international marketing, sales management, advertising research, sales promotion, and purchasing and merchandise buying.

Degree Requirements	**Hrs.**	**Totals**
Non-B&E Liberal Studies Program Requirements		56
Unrestricted Electives (in or out of College of B&E)		6
Required College Core Courses		39
Required Courses in Major		
MKTG 310 *Marketing Research*	3	
MKTG 315 *Consumer Behavior*	3	
MKTG 400 *Global Marketing*	3	
MKTG 470 *Marketing Management*	3	
MKTG Electives*	12	
Business and/or Economics Electives	3	27
Grand Total		**128**

*MKTG 491, *Professional Field Experience*, cannot be used for marketing elective credit.

Recommended Sequence of Corses

First Semester	Hrs.
BCOR 310	1
BCOR 315	1
BCOR 320	3
BCOR 330	3
BCOR 340	3
BCOR 350	3
BCOR 370	3
Total	**17**

Second Semester	Hrs.
BCOR 360	3
MKTG 310	3
MKTG Elective	3
MKTG Elective	3
Outside Elective	3
Total	**15**

Third Semester	Hrs.
BCOR 410	1
MKTG 315	3
MKTG 400	3
MKTG Elective	3
Outside Elective	3
Total	**13**

Fourth Semester	Hrs.
BCOR 460	3
MKTG 470	3
MKTG Elective	3
B&E Elective	3
Outside Elective	3
Total	**15**

College of Creative Arts

Bernard Schultz, Ph.D., Dean and Director
www.wvu.edu/~ccarts

Degrees Offered

Bachelor of Arts (in Visual and Performing Arts)
Majors: Art History, Music, Theatre

Bachelor of Fine Arts
Majors: Theatre, Visual Art (with or without certification)

Bachelor of Music

Introduction

Creative development in art, music, and theatre is the purpose of the College of Creative Arts of West Virginia University. A distinguished faculty of scholars and artists bring to the college's outstanding facilities a commitment to a creative process of artistic growth which is shared with each student. Here, in a rich environment of plays, art exhibits, and concerts, we offer students the knowledge, skills, and inspiration necessary for professional success.

College of Creative Arts fine arts grants are available each year in the Divisions of Art, Music, and Theatre and Dance. The Divisions of Art, Music, and Theatre and Dance maintain additional scholarship funds.

Auditions for scholarships in music and theatre and portfolio reviews for scholarships in art are scheduled throughout the school year. For information or an appointment, write to the appropriate division chairperson, College of Creative Arts, West Virginia University, P.O. Box 6111, Morgantown, WV 26506-6111, or telephone (304) 293-4841.

Admission Requirements

The College of Creative Arts uses the admission standards and procedures of the University. In addition, because of the creative nature of our students, we admit some students under the individual consideration clause of the general admission policy. This category allows admission of exceptionally talented students in art, music, and theatre who might not meet the criteria for grade point averages and standardized test scores.

The Division of Theatre and Dance may audition prospective students before an admission decision. All music applicants must audition before consideration for admission to a program in the Division of Music. The Division of Art requires all applicants to submit a portfolio for review. Please refer to the specific criteria of the three divisions in their program descriptions.

Students transferring to the College of Creative Arts from other colleges and universities are required to present a minimum grade point average (GPA) of 2.0 in addition to the standard auditions or portfolio reviews. Exceptions may be made in the case of first-semester freshman students.

Graduation Requirements

The Divisions of Art, Music, and Theatre and Dance have specific graduation requirements for their programs. Please refer to the individual program descriptions for this information.

Application for Graduation

During the second semester of your junior year, come to the College of Creative Arts Records Office and request a review of your records and the requirements of your particular program. During the first month of your last semester (the one in which you expect to graduate) or summer session, you will apply for graduation and diploma. If you do not actually graduate when you expected to, you must re-apply for a later date. No candidate can graduate without this application.

Division of Art

Sergio Soave, M.F.A., Chair

Degrees Offered

Bachelor of Visual and Performing Arts
Major: Art History
Bachelor of Fine Arts
Majors in Visual Art (with or without teaching certification): Ceramics, Graphic Design, Intermedia, Painting, Printmaking, Sculpture

Nature of Program

The Division of Art is an accredited institutional member of the National Association of Schools of Art and Design. The curriculum of the division is designed to afford the student an opportunity to explore the visual arts. Undergraduate programs offer scholarly and studio experiences to potential artists and teachers. The in-depth instruction is enhanced by the close working relationship between students and faculty, which allows sharing the insights and investigative processes of professional artists and scholars.

A bachelor of fine arts (B.F.A.) degree is conferred upon those students who satisfy all University and departmental requirements, complete the appropriate curriculum, and comply with the general regulations of the University. The art education curriculum (see art education) is a five-year program; it unites the B.F.A. curriculum with the appropriate coursework for teacher certification in art, K-12.

A degree candidate in the Division of Art must maintain a minimum GPA of 2.0 (C); admission to the teacher certification program requires a 2.5 GPA. Students must earn a grade of C or higher in art studio and/or art history classes in order for the course to fulfill degree requirements. In addition, students may be requested to present a portfolio of selected works for examination and evaluation by a faculty committee. The committee is empowered to make recommendations regarding the student's status as a major in art and their continuation toward a degree in art.

Transfer applicants must undergo a portfolio review to gain admittance in the program. Evaluation for advanced standing or transfer credit in studio subjects is not made solely upon the presentation of a transcript but also depends on the evaluation of a portfolio of art work. The Division of Art also requires a portfolio examination for placement in the program.

International Study Opportunities

The Division of Art has established excellent international educational and exchange programs. These include summer study, short term, and semester-long programs. The focus of these international exchanges is with sister institutions in China and Mexico. Additional opportunities in other countries are also available. Students should consult with their advisor about taking language courses and other liberal studies courses that would support international studies.

Advising

The College of Creative Arts recommends that all art majors confer regularly with their advisors in order to maintain the correct distribution of coursework and to establish the necessary prerequisites for upper-division instruction. Students will find it difficult to carry more than three studio art classes in one semester.

Audit, Credit by Examination, Pass/Fail, and Non-Art Major Courses

No studio or art history courses are available on an audit or credit by examination basis. Students enrolled in the Division of Art may not take art classes on a Pass/Fail basis. Courses designated for non-art majors may not be substituted for art degree requirements unless approved in advance by the chairperson of the Division of Art.

Student Work

Every effort is made to protect student work and property. Work displayed in the Mesaros Galleries is insured for the exhibition period. The Division of Art does not accept responsibility for damage or losses under other circumstances. The Division of Art reserves the right to retain certain examples of student work for reproduction and exhibition purposes.

Art Supplies

Supplies for classroom presentations, demonstrations, and common use must—for economy and availability—be purchased from a central source and fund. To expect every student individually to supply all materials needed for high consumption courses of instruction would create a situation of excessive financial hardship for most and a complex logistical problem for all. To offset this burden, the Division of Art orders in advance necessary supplies at a bulk rate, and requires each student enrolled in those studio classes in which materials are supplied to share the cost through an art fee assessed each semester. The chairperson can provide a complete list of materials supplied. As the art fee is used to purchase supplies for common consumption, students will also need to purchase materials for individual or specialized projects.

Portfolio Reviews

The Division of Art requires a portfolio review for all applicants to the bachelor of fine arts program. This evaluation is conducted by the art faculty and is designed to ensure that all students entering the studio program have certain basic competencies and skills. All portfolio reviews are completed by February 1, so students are encouraged to apply and complete the portfolio review at the earliest possible date. Applicants should visit the division web site: www.wvu.edu/~ccarts or phone the office at 304-293-4841 ext. 3139 to receive detailed instructions and portfolio review application materials.

All first-year students are required to participate in the portfolio review which takes place near the end of the spring term. The portfolio must consist of work completed in foundation courses (Art 111 and 112, Art 121 and 122) and, if possible, selections should be reviewed by a student's particular instructor. The portfolio should include ten drawings, three works from 2-D foundations, and three works from 3-D foundations. Transfer students will also be reviewed. Faculty and graduate assistants who teach foundations courses meet to review student work and in some cases may recommend that a student repeat a particular course and resubmit the portfolio for approval to advance in the program.

This portfolio review and exhibition is intended to accomplish the following goals:

- To underscore the fact that the faculty recognizes and values the students as young artists and designers who will compose the future of our program.
- To examine their work relative to the department's expectations regarding levels of proficiency achieved with respect to foundations area courses.
- To improve retention by identifying students whose work does not meet departmental expectations and give them the opportunity, direction, and encouragement to improve their performance.

Concurrent with this review, the faculty will have the opportunity to identify students whose work is of very high quality and recommend them for a scholarship. Students should keep their work in good condition and preserve it for the review.

Students wishing to pursue studies in graphic design or electronic media must submit portfolios for review during the second semester of their sophomore year. Contact the department professor for information regarding the portfolio review for graphic design or electronic media. The Division of Art also reserves the right to require a portfolio review to determine a student's retention in a program or studio emphasis.

Bachelor of Arts Degree

The major in art history provides a scholarly examination of the history of art and architecture in its cultural and theoretical context. Once accepted into the University and into the art history program, the B.A. candidate must complete curriculum requirements in order to graduate. The B.A. curriculum includes required and elective art history

courses, studio art courses, cognate courses, and University-established liberal studies program requirements. Students are encouraged to study abroad during one or two semesters of the junior year. In the final semester, the student will complete a senior research project on a topic selected by the student with approval of the art history faculty.

Minor in the History of Art

Students who pursue degrees in other disciplines with liberal studies and the arts and humanities may find that the study of the history of art enhances comprehension of their primary field of study and permits them to achieve a broader and deeper understanding of cultural history. Information about the minor in the history of art is available from the coordinator of art history or the academic advisor in the Division of Art.

Bachelor of Fine Arts (B.F.A.)

The bachelor of fine arts (B.F.A.), a professional degree, is awarded to those persons who have satisfactorily completed the required 129-130 semester credit hours of study and made the expected commitment to the vocation of art. This degree program requires an amount of self-education based on a sound foundation of studio experience. Students in the B.F.A. curriculum may participate in a wide range of studio class work, including drawing, design, painting, printmaking, ceramics, graphic design, and sculpture, as well as a program of art history. Teacher certification in art, K-12, may be earned with any area of studio emphasis in the B.F.A. program. Through careful counseling, individual goals are established in keeping with the student's aims and talents.

The Division of Art is committed to providing the opportunity and the environment for the best possible education in the visual arts at both the undergraduate and graduate levels. The division's program of professional education is centered in the studio arts and reinforced with art history and liberal studies. Students are encouraged to take advantage of the broad range of educational possibilities available at the University and to enroll in courses that support their professional goals and enrich their knowledge.

Curriculum Requirements

Once accepted into the University and the art program following a review of the applicants portfolio, the B.F.A. candidate must complete all curriculum requirements in order to graduate. The B.F.A. curriculum includes required and elective art courses, art history courses, and University-established academic (liberal studies) requirements. During the first two years, the art student must complete a specific sequence of courses in art history, art orientation, drawing, and visual foundations for a total of 19 credit hours. Art electives, which are available in all major studio areas, are designed to provide the basic experience to enable a student to select a major by the beginning of the third (junior) year. The student must complete 12 credit hours of these studio electives and six credit hours of advanced drawing to complete the lower-division requirements of the art program (a total of 37 hours within the Division of Art).

B.F.A. Degree Minimum Credit-Hour Requirements	**Hrs.**
Studio (12 credits in drawing; 30 credits in major area)	72
Art Orientation	1
Art History	12
Liberal Arts (required by the University)	38-39
Open Electives	6
Total	**129-130**

Ceramics, Graphic Design, Painting, Printmaking, Sculpture Bachelor of Fine Arts (B.F.A.)

In order to complete the B.F.A. degree program in four years, a student must take 15 to 18 credit hours per semester, or 32 to 36 credits per year. Thirty credit hours are required in the studio major area: six hours of 200-level courses and 24 hours of 300-level and 400-level courses. Additional information is available from the coordinator of the various areas or the divisional academic advisor.

To enter the upper-division major area studio courses, the student must complete the four-semester lower-division program, including at least two semesters (six semester credit hours) of introductory work from the area of intended major.

Lower Division The two-year, lower-division required sequence of courses in drawing, visual foundations, art orientation, art history, and introductory studio prepares the student for advanced study. Idea development, technical ability, and communication skills are taught with equal emphasis by involving the student in a wide range of problems.

The first year of lower-division instruction offers a broad experience in drawing, design, and art history. Emphasis is on basic skills concepts and the development of a common vocabulary with which student objectives can be clearly defined. In the second year, students have the option of selecting introductory courses from three of the six major studio areas which are most suited to their particular interests. Figure drawing and advanced drawing are also required in the second year. Lower-division art requirements are as follows:

	Hrs.
ART 111 *Drawing*	3
ART 112 *Drawing*	3
ART 199 *Art Orientation*	1
ART 121 *Visual Foundation*	3
ART 122 *Visual Foundation*	3
ART 105 *Survey of Art*	3
ART 106 *Survey of Art*	3
ART 211 *Figure Drawing*	3
ART 212 *Advanced Drawing*	3
Studio Introductory 200-level courses	12
Total	**37**

Upper Division The third year of study marks the entry into the upper division. The student begins to concentrate in one area of major studio concern, and to direct and apply the basic skills acquired during the first two years of art instruction. Major areas offered by the Division of Art are ceramics, painting, printmaking, graphic design, and sculpture.

During the third and fourth years, the studio major accounts for a minimum of 24 semester credit hours or almost half the credit earned. The remaining credit hours are taken in art history, art electives, and liberal arts. Upper-division art requirements are:

	Hrs.
ART 300 *Studio Major*	24
ART 200/300 Art Electives	18
ART 200/300 *Art History*	6
Total	**48**

B.F.A. Liberal Arts Requirements Liberal arts requirements are defined by WVU. The undergraduate art student must successfully complete a minimum of 39 semester credit hours of liberal arts to qualify for graduation. To satisfy this requirement, the following distribution of liberal arts credits must be achieved.

	Hrs.
ENGL 101 and 102	6
MATH	3
Cluster A (Humanities)	6
Cluster B (Social Sciences)	12
Cluster C (Natural Sciences)	11-12
Total	**38-39**
Open electives	6

Suggested Curriculum

First Year

First Semester	Hrs.	Second Semester	Hrs.
ART 111 *Drawing*	3	ART 199 *Art Orientation*	1
ART 105 *Art Survey*	3	ART 112 *Drawing*	3
ART 121 *Visual Foundation*	3	ART 106 *Art Survey*	3
ENGL 101	3	ART 122 *Visual Foundation*	3
LSP Cluster C	3-4	LSP Cluster B	3
Orientation 101	1	LSP Cluster C	3-4
Total	**16-17**	**Total**	**16-17**

Second Year

First Semester	Hrs.	Second Semester	Hrs.
ART 211 *Drawing*	3	ART 212 *Drawing*	3
ART 200-Level Studio Major*	3	ART 200-Level Studio Major*	3
ART 200-Level Elective*	3	ART 200-Level Elective*	3
ENGL 102	3	Mathematics	3
LSP Cluster B	3	LSP Cluster A	3
Elective****	3	**Total**	**15**
Total	**18**		

Third Year

First Semester	Hrs.	Second Semester	Hrs.
ART 300 *Studio Major*	6	ART 300 *Studio Major*	6
ART Elective**	3	ART Electives**	6
ART 200 *Art History*	3	ART 300 *Art History*	3
LSP Cluster C***	3-4	LSP Cluster B	3
Total	**15-16**	**Total**	**18**

Fourth Year

First Semester	Hrs.	Second Semester	Hrs.
ART 300 *Studio Major*	6	ART 400 *Studio Major*	6
ART Elective**	3	ART Elective**	6
LSP Cluster A	3	Elective****	3
LSP Cluster B	3	**Total**	**15**
Total	**15**		

Thirty credit hours are required in the studio major area: six hours are 100-level and 24 hours are 200-level. Additional information is available from the coordinator of the various areas or divisional academic advisor.

*The total of 12 hours of required 200-level must include three of the six major studio areas.
**Art electives may be either 200 or 300-level. Two sequential semesters of 200-level courses are prerequisite for 300-level courses in any given area.
***The 12-hour cluster C requirement may be fulfilled by one three-hour and two four-hour courses; an additional hour would be required elsewhere.
****Electives may be art history, studio art, or other courses offered by other units in the University.

Summary of Requirements	**Hrs.**
Studio and Art Electives (includes *Art Orientation*)	73
Art History	12
LSP Cluster Requirements	38-39
Electives	6
Total	**129-131**

Bachelor of Fine Arts (B.F.A.) with Teacher Certification, K-12 Ceramics, Graphic Design, Painting, Printmaking, Sculpture

Students wanting certification to teach K-12 in West Virginia must complete competency requirements established by the state in addition to Division of Art B.F.A. degree requirements. This unique program allows students to earn teacher certification while emphasizing a content area within the B.F.A. curriculum. Typically, the student's schedule is reviewed with an art advisor, the division chairperson, or the art education coordinator.

Liberal Arts and Education Requirements Liberal arts requirements are designed by the certifying agency of the state of West Virginia and WVU. Education requirements are maintained by the state. Undergraduate art students desiring certification should consult with the art education coordinator to be certain of compliance with certification criteria.

B.F.A. with Certification Curriculum This variation of the regular B.F.A. program begins after the completion of the freshman year and requires careful selection of both studio and academic courses. With the additional liberal studies and education course requirements, four-and-a-half to five years of school work should be anticipated. Students wishing certification to teach K-12 in West Virginia must complete competency requirements established by the state in addition to Division of Art B.F.A. degree requirements. B.F.A. degree with certification requirements and suggested course of study are as follows:

First Year

First Semester	Hrs.
ART 111 *Drawing I*	3
ART 105 *Art Survey I*	3
ART 121 *Visual Foundation I*	3
ENGL 101	3
Cluster C	4
Orientation 101	1
Total	**17**

Second Semester	Hrs.
ART 112 *Drawing II*	3
ART 106 *Art Survey II*	3
ART 122 *Visual Foundation II*	3
Cluster B	3
Cluster C	4
Cluster C	4
Total	**17**

Second Year

First Semester	Hrs.
ART 211/212 *Drawing*	3
ART 213/214 *Painting*	3
ART 226/227 *Sculpture*	3
ENGL 102	3
Cluster C	3
Total	**15**

Second Semester	Hrs.
ART 211/212 *Drawing*	3
ART 230/231 *Printmaking*	3
ART 240/241 *Ceramics*	3
Cluster B	3
Cluster A MUSC *or* THET 170 or 101	3
Total	**15**

Third Year

First Semester	Hrs.
ART 200 *Studio Major*	3
ART 200/300 Art Elective(s)	3
PE or DANC 102	2
Cluster A (Lit)	3
Creative Arts Elective	3
Total	**14**

Second Semester	Hrs.
ART 300 *Studio Major*	6
ART 264 *Art Education*	3
Cluster B	3
MATH	3
Total	**15**

Fourth Year

First Semester	Hrs.
ART 300 *Studio Major*	6
EDUC 301 *Learning I*	2
Cluster C	4
ART 265 *Art Education*	4
Total	**16**

Second Semester	Hrs.
ART 300 *Studio Major*	6
ART 200 *Art History*	3
ART 266 *Art Education*	4
EDUC 302 *Learning II*	2
Total	**15**

Fifth Year

First Semester	Hrs.
ART 300 *Art History*	3
ART 365 *Art Education*	3
ART 400 *Studio Major*	6
Spec. Educ. or Educ.	3
Total	**15**

Second Semester	Hrs.
C&I 584	8
C&I 585	8
Total	**16**
Grand Total	**153-155**

Division of Music

David Bess, Ph.D., Chair
John Hendricks, M.M., Assistant Chair of Undergraduate Curriculum
Keith Jackson, D.M.A., Assistant Chair of Graduate Curriculum
www.wvu.edu/~music

Degrees Offered

Bachelor of Music
Majors: Performance—areas of emphasis in Band Instrument, Orchestra Instrument, or Guitar; Organ; Piano (traditional, coaching-accompanying, piano pedagogy, jazz); Voice; Woodwinds
Jazz Studies
Music Composition
Music Education
Music History
Bachelor of Arts
Music Minor

The Division of Music has been an important part of the WVU's cultural and academic life since 1897, when the division's antecedent, the School of Music, was established. The University has been an institutional member of the National Association of Schools of Music since 1947. The 44-member faculty includes internationally acclaimed artists and scholars who are distinguished teachers as well. The division is part of the College of Creative Arts, the center for the visual and performing arts at WVU and in the state of West Virginia.

Mission

The Division of Music, as part of WVU's College of Creative Arts, offers professional preparation for careers in composition, performance, and teaching of music. The division's nationally accredited programs, strengthened by creative activity and research, provide an educational environment for the exploration and understanding of music. The music faculty fosters this mission through many activities, including presentation, research, service, performance, and recruitment. The division is supported by the resources of a comprehensive land-grant university supplemented by grants and private donations.

The division's mission asserts that music is vital to our culture and vital to understanding the cultures of other peoples. This is achieved through a curriculum designed to prepare students to create, to recreate, and to educate. Create: to explore new ways of expressing the human experience through music. Recreate: to touch history and bring it to life, enabling musicians, through performance, to reach into the realm of the soul and express the very things that make us human. Educate: to enable future generations to experience music as a union of cognitive and creative pursuits.

We believe that education for professional careers in music must encompass achievement of specific musical and pedagogical skills as well as a liberal education that prepares individuals to be citizens of the world. We are committed to providing the highest levels of creative, intellectual, and cultural experiences in music to the WVU, the state, and the region.

Career Prospects

When you complete an undergraduate degree in music from WVU, you will have a variety of occupations from which to choose. In preparing for those, depending upon your interests and aspirations, you may pursue one of two degree programs: the bachelor of music (B.M.) or the bachelor of arts (B.A.).

The B.M. program offers students several specialized courses of study. Those concentrating in music education are prepared to teach vocal, instrumental, and general music in grades K through 12, as well as to pursue graduate study in the same field. Those majoring in performance are prepared for careers as performers or for graduate study to increase their artistry further. Those concentrating in music history are prepared to continue their studies at the graduate level, perhaps with the ultimate goal of a career in higher education. Upon completing a major in composition, graduates may either begin careers as composers or continue their studies at the graduate level. The B.A. program is designed for those seeking a broad liberal arts education while majoring in music. Depending upon the courses chosen, one can prepare for graduate study in music or in another field.

Admission Requirements

Acceptance into an undergraduate music degree program is contingent upon admission to WVU as an undergraduate student and a successful performance audition. Auditions are held principally in February and March in Morgantown. Dates for auditions and details concerning them are available from the Division of Music and on the web site. Special accommodations may be made by contacting the Division of Music at (304) 293-4841 ext. 3196. The audition is a preliminary assessment of your potential for success in the program. If you are admitted, your standing is confirmed or revised after the first semester of study. You should own your own instrument under normal circumstances (except for piano) and a portable (folding) music stand. If you are a music major, you can change from one music curriculum to another with faculty approval, particularly during the freshman or sophomore years, without great loss of course credit. You are encouraged to explore and follow the curriculum for which you are best qualified and in which you can expect the greatest success. Evaluation of your work by the Division of Music faculty aids these decisions. If you wish a broader, liberal arts-oriented, non-professional program, you may pursue the bachelor of arts (B.A.) degree. In addition to the undergraduate program, courses leading to the following graduate degrees are offered: master of music, doctor of philosophy, and doctor of musical arts.

Music Scholarship Resources

John R. Barnes Memorial Scholarship Fund

Endowment income is to provide scholarship aid annually to enrolled students at the WVU College of Creative Arts majoring in instrumental music.

Clifford and Carolyn Brown Music Alumni Scholarship

Endowment income is to be used to provide scholarships for regularly enrolled undergraduate or graduate music majors in the Division of Music.

Helen Canfield Endowed Music Scholarship

Endowed income shall be used for scholarships for students enrolled in the Division of Music in the College of Creative Arts majoring in piano.

Toni and Red Cowsert Music Scholarship

Income from this scholarship shall cover tuition and student fees of the recipient in the Division of Music with preference to students with physical disabilities.

Eleanor Tucker Donley Memorial Scholarship

Endowment income is to be used to provide scholarships for undergraduate or graduate students in the Division of Music.

David C. and Susan B. Hardesty Music Scholarship

Income shall be used annually for scholarships for undergraduate students enrolled in the College of Creative Arts Division of Music.

John Shields Kramer Endowment Scholarship

Endowment income is to be used to provide scholarships for deserving students interested in voice (bass/baritone).

Elizabeth Traubert Lane Music Scholarship
Spendable income is to provide scholarship aid annually to enrolled students in the Division of Music. The recipients shall be regularly enrolled students at WVU of junior, senior, or graduate rank and majoring in music education.

Frank E. and Margaret S. Lorince Scholarship
Endowment income shall be used for scholarships for regularly enrolled freshman or first-year undergraduate or graduate students in music education in the Division of Music.

Loyalty Permanent Endowment Fund
Scholarships provided by the WVU Alumni Association through gifts from various alumni.

Geraldine Hess Lyon Educational Fund
Endowment income is to be used to provide scholarships for regularly enrolled undergraduate students in the Division of Music with preference given to students majoring in voice.

Music Faculty Recognition Scholarship
Endowment income is to be used to provide scholarships for talented music students.

Phyllis McCane Osenton Music Scholarship
Endowment income shall be used for scholarships for regularly enrolled sophomores or above in music education in the Division of Music.

Performing Arts Scholarship
Scholarship awards made possible through funding from West Virginia University.

Presser Scholarship
Given yearly to a senior music education student based on merit. Award is funded through a grant from the Presser Foundation.

Ida Cope Tait Music Endowed Scholarship
Endowment income is to be used to provide scholarships in the Division of Music.

University Presidential Scholarship
Scholarship awards made possible through funding from West Virginia University.

Virginia Holden Wellock Music Scholarship
Endowment income is to be used to provide scholarships for undergraduate or graduate students in the Division of Music.

Edith Roberts Williams Music Scholarship
Endowment income is to be used to provide scholarships for undergraduate or graduate students in the Division of Music.

WV Wine and Jazz Festival Scholarship in Jazz Studies
Endowment income is to provide scholarship aid annually to enrolled students in the Division of Music. Recipients shall be regularly enrolled at WVU as undergraduate students majoring in jazz studies.

WVU Music Alumni Association Scholarship Fund
Endowment income is to provide scholarship aid annually to enrolled students in the WVU College of Creative Arts Division of Music.

Performing Ensembles

One of the hallmarks of the Division of Music is its commitment to the study and performance of high-quality and historically significant music from all stylistic genres. WVU music faculty continue to present highly praised performances, both on and off campus. Faculty performing groups include the Laureate Wind Quintet, the Faculty Jazz Ensemble, the West Virginia Piano Quartet, and the Faculty Chamber Ensemble. WVU student performing groups include a wide range of opportunities in a variety of musical traditions and styles.

The student and community performing groups are open to all qualified WVU students by audition. All groups must be taken for credit unless noted below.

In exceptional cases, high school seniors may perform at a director's discretion in an ensemble for credit, provided the requirements as specified in this catalog are met. Qualified high school and junior high students may participate in select WVU student performing ensembles as part of the Community Arts Honors Ensemble Program with the permission of

the director of the Community Arts Program and the ensemble director. For further information contact the director of the Community Arts Program at (304) 293-4841 ext. 3185.

The award-winning *Mountaineer Marching Band* ("The Pride of West Virginia") of over 325 members is open, by audition, to all qualified students in the University. Its activities are confined to the first semester, during which it presents exciting shows at football games and other special occasions throughout the state and the country.

The *Wind Symphony* is a select group of approximately 50 wind and percussion players chosen by audition. The ensemble performs challenging literature particularly appropriate to its size and special characteristics.

The 60-member *Concert Band* is open to all qualified students in the University. This ensemble rehearses and performs both traditional and contemporary band music.

The 50-member *Pep Band* is open, by audition, to all qualified students in the University. It performs at men's and women's home basketball games and also travels to various tournaments.

The *University Symphony Orchestra* is open, by audition, to all qualified WVU students and adult residents of the community who are proficient in the playing of an orchestral instrument. The repertoire is that of the standard orchestra, with special emphasis on contemporary American music. Adult community members need not enroll.

The *University Choir* is the flagship choral ensemble, numbering 35-40 vocalists selected by audition. This choir studies and performs challenging repertoire from all stylistic genres, accompanied and *a cappella*, and travels extensively. The choir has premiered the music of student composers, participated in several recording projects, and presented major concerts both regionally and internationally.

The *Concert Choir,* an ensemble of 30-35 voices, specializes in the study and performance of standard choral repertoire from all stylistic genres. Vocalists are selected by audition.

The *University Choral Union,* a choir of 90-110 voices, studies and performs choral masterworks and other music for large choir. University students and adult community members may participate; an audition is required. Adult community members need not enroll.

In addition to the larger choirs, several vocal chamber ensembles are open by audition to the University community. *Mountaineer Singers,* a select group of 12-16 singers, studies and performs traditional chamber music including madrigals, partsongs, and contemporary forms. Comprehensive study and performance of traditional and contemporary vocal jazz music is presented in *Same Difference*, a vocal sextet with rhythm section, and the 16-24 voice *Vocal Jazz Ensemble.*

Small and large *Jazz Ensembles* are open, by audition, to all qualified WVU students. These ensembles perform a wide variety of jazz styles and many original compositions.

The *Opera Theatre* mounts fully staged productions of standard operatic repertoire and also presents programs of opera scenes each season. A variety of chamber ensembles feature combinations of woodwinds, brass, percussion, and string instruments and include the internationally acclaimed *Percussion Ensemble* (Percussion 2000), *African Music and Dance Ensemble*, and the *New Music Ensemble.*

General Requirements for the Bachelor of Music and Bachelor of Arts in Music

It is possible to complete any of the curricula described below in eight regular semesters with careful planning. You may elect to take additional courses, lengthening the time spent in your degree program.

Proficiency Levels Before graduation, you must satisfy a proficiency level (specified for each curriculum) in your principal performance area and in piano. In addition to fulfilling the proficiency level requirement in piano indicated in the curriculum, you are required to demonstrate proficiency in keyboard harmony and sightreading by passing a special examination. Music education majors must satisfy additional proficiencies.

You are required to take applied lessons on your principal performance medium each semester in residence. Proficiency levels in your principal performance medium are awarded at juries, which are usually given at the end of each semester. Jury policies for each principal performance area are given on the Division of Music web site or are available from the chair's office or the area coordinator.

Major Ensemble Requirement You must register for a major ensemble each semester of residence. Major ensembles are Music 100, 100A, 100D, 102, 103, 105, and 183, 183A. If you are a scholarship recipient, you may be called upon to render special service (as a participant in particular organizations or ensembles, as a piano accompanist, etc.) as designated by the division chairperson. Students whose major performance medium is percussion must, in addition to a major ensemble, register for *Freshman Percussion Ensemble, Second Percussion Ensemble,* or *Percussion 2000* each semester in residence.

Chamber Music Requirement Courses which satisfy the chamber music requirements for the B.M. and B.A. are Music 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 183B, 183C, 183D, 183E, 183F, 183G, and 183H.

Recital and Convocation Attendance If you are a full-time undergraduate music major entering as a freshman, you are expected to register for six semesters of Music 189 *Music Convocation* and to attend five recitals or concerts and five convocation meetings per semester. This requirement is adjusted for transfer students. B.A. students are required to take Music 189 for two semesters.

Completion of Degree Requirements You are responsible for being aware of and correctly fulfilling all graduation requirements. You should review the curriculum requirements both before and after every registration period so that errors or omissions will be detected immediately. If you are a transfer student, you must establish transfer credit from other institutions as early as possible in your WVU study—preferably during the first semester of residence. The degree of bachelor of music or bachelor of arts is conferred if you comply with the general regulations of the University concerning degrees, satisfy division requirements (including expected proficiency levels), and complete an appropriate curriculum with a minimum overall grade point average of 2.0 (C). Music education majors must attain a 2.75 average for graduation and certification.

If you achieve a grade of A in Music 262 *Sophomore Written Theory*, you may elect an upper-division theory analysis course (Music 463 or 464) in place of the Music 264 requirement. If you achieve a grade of A in Music 261 *Sophomore Aural Theory*, you may elect an upper-division theory elective in place of the Music 263 requirement.

Music Theory and History Electives Unless specified as a degree requirement, upper-division theory electives are Music 265, 266, 285, 286, 360, 461, 462, 463, 464, 465, 466, 468, 480, 481. Unless specified as a degree requirement, upper-division history electives are Music 470-476.

Academic Progress If in the judgment of the faculty, chair, and dean it will be impossible for you to complete graduation requirements in a reasonable length of time, your enrollment in the Division of Music will be terminated. If you are admitted conditionally, you must make up deficiencies as soon as possible. Further information regarding academic progress policies can be obtained from your advisor or the Division chair's office.

Course Substitutions, Curricular Waivers, or Credit by Examination Requests for course substitutions, curricular waivers, or credit by examination will need to be made in writing to the chair of music. If the chair endorses the request, it will be forwarded to the dean of the College of Creative Arts for final approval.

Student Policies For further information, please refer to the current undergraduate student policies on the Division of Music web site or at the office of the departmental chair.

Bachelor of Music with a Major in Music Education

Students successfully completing the music education curriculum and all tests required by the West Virginia Department of Education will be qualified for a professional certificate, grades K-12, which allows them to teach instrumental, vocal, and general music in the public schools of West Virginia. Music education students should begin as freshmen at proficiency level three on their principal performance medium (instrument or voice) and must complete proficiency level seven on the medium to be eligible for graduation. Students must present two solo performances on the major instrument or voice in upper-level recitals before graduation.

Pre-Professional Requirements Before enrolling in professional education methods courses (Music 380, 381, 382) students must pass the National Teacher Examination

Pre-Professional Skills Test (PPST), and successfully complete pre-professional requirements. Pre-professional requirements for any music education methods course are: Music 133 or equivalent (Level 2), 138, 161-164, 177, 180, 200, 261, 262, 270.

In addition to the general pre-professional requirements indicated above, pre-professional requirements for specific music education methods courses are:

Music 380: Music 280 (minimum of two woodwind instrument proficiencies) and recorder proficiency *and* Music 281 (minimum of two brass instrument proficiencies) and guitar proficiency.

Music 381: Music 284 and Music 280 (minimum of two woodwind instrument proficiencies) and recorder proficiency or Music 281 (minimum of two brass instrument proficiencies) and guitar proficiency or Music 282 (minimum of three instrument proficiencies) or Music 283 (minimum of three percussion instrument proficiencies).

Music 382: Music 280 (minimum of two woodwind instrument proficiencies) and recorder proficiency and Music 281 (minimum of two brass instrument proficiencies) and guitar proficiency.

The PPST requirement can be waived for students who have a composite score of 26 or above on a single administration of the ACT or a score of 1125 or above on a single administration of the SAT.

Requirements to Student Teach Students must pass all proficiency examinations prior to the semester in which they student teach. In addition to the piano, recorder, and guitar proficiencies listed above, students must pass proficiencies on voice and selected woodwind, brass, string, and percussion instruments. For the piano proficiency, all undergraduate music education majors (non-piano principals) are required to successfully complete Music 133 or its equivalent (level two) as a minimum proficiency in piano. All music education students, including piano principals, must pass a proficiency examination in keyboard harmony and sightreading.

To be eligible to student teach, students must pass the Praxis Series subject area test in music (Music: Content Knowledge [0113]) and meet the following GPA requirements: a) an overall GPA of 2.75 in all courses taken at WVU and at any other institution (this includes courses taken at other institutions which are not accepted by WVU); b) a GPA of 2.75 in all music (content area) courses; and c) a GPA of 2.75 in professional education courses and music education methods courses (Music 180, 280, 281, 282, 283, 284, 380, 381, 382; Education 301, 302) with no Ds or Fs in these courses.

To be recommended for graduation, students must pass one of the three following professional education tests: Principles of Learning and Teaching K-6, Principles of Learning and Teaching 5-9, or Principles of Learning and Teaching 7-12.

Student Teaching Students may indicate a preference to student teach during the fall or spring semester. Ordinarily, preferences will be accommodated, although there may be certain instances in which students will be advised to change semesters. The primary considerations when assigning students to teaching placements are the quality of the placement and the students' professional goal. Due to the limited number of music placements in the Morgantown area, students should plan to relocate during the semester in which they student teach. Student requests for specific regions, school districts, etc. will not be entertained by the coordinator of the music student teaching program unless the student can demonstrate that she or he is faced with severe personal constraints. Teaching placements will generally be within a 100-mile radius of Morgantown. Students should plan to provide their own transportation during the student teaching semester.

Required Courses	**Hrs.**
Professional Education (20 Credits)	
Education 301, 302	4
Curriculum and Instruction 491	12
Studies in Music (74-78 Credits)	
MUSC 189 *Convocation* (six semesters)	0
MUSC 177 *Introduction to Music Listening*	1
MUSC 270-271 *Music Literature*	6
MUSC 180 *Introduction to Music Education*	1
MUSC 280-284 *Music Pedagogy*	10

MUSC 200-202 *Conducting* 6
MUSC 161, 163, 261, 263 *Aural Theory* 8
MUSC 162, 164, 262, 264 *Written Theory* 8
MUSC 130-133 *Secondary Piano* (if piano is not principal) 4
MUSC 138 2
MUSC 150-183H, 140-149 *Chamber Music* 1
MUSC 106-127 *Principal Performance Studies* 14
MUSC 380 *Instrumental Music Education* 3
MUSC 381 *Vocal Music Education* 3
MUSC 382 *General Music Education* 3
MUSC 384 *Music Arranging for Public School Groups* 2
MUSC 492 *Directed Study* (student teaching seminar) 2
Major Ensemble 7
General Studies (41-42 Credits)
UNIV 101 1
ENGL 101-102 *Composition and Rhetoric* 6
MATH 3
Cluster A Courses 9
(must include either Art 101 or Theatre 101, an English Literature course, and a history course in addition to Music 270-271)
Cluster B Courses 12
Cluster C Courses 11-12
Grand Total 139-143

Combined Performance/Music Education Curriculum

An optional program can be arranged for outstanding students who desire to meet the requirements of majors in both performance and music education. Admission to this rigorous program is by written consent of the coordinator of the appropriate performance area and the coordinator of music education after the student has completed two semesters. This curriculum satisfies the course requirements of the professional certificate for grades K-12. The numerous possible combinations of performance with music education cannot be listed separately here. When you become a candidate for this degree, your advisor designates the specific courses which must be taken to satisfy the requirements for both a bachelor's in performance and a bachelor's in music education. By attending summer sessions, if appropriate courses are available, it may be possible to complete the combined curriculum in four calendar years, although it usually takes longer.

Bachelor of Music with a Major in Performance

The performance curricula are especially designed for students wishing to prepare themselves as performers or as teachers of a particular instrument or voice. The increased interest of society today in the arts is creating many new opportunities for the professional musician and for the private music teacher.

A student in a performance curriculum, if entering as a freshman, should achieve proficiency level six in the principal performance area at the time of audition, and must complete proficiency level ten in that area to be eligible for graduation. In addition to presentation of a senior recital, performance majors also must make three solo appearances on the major instrument in upper-level student recitals or convocations. Exceptions to this policy are noted below.

Performance Curriculum: Band or Orchestra Instrument, or Guitar

Flute, oboe, clarinet, saxophone, bassoon, horn, trumpet, trombone, euphonium, tuba, percussion, violin, viola, cello, double bass, and guitar. A proficiency level of ten and three solo appearances on upper-level recitals are required for graduation.

Required Courses	Hrs.
Major Area	
MUSC 106-126 *Applied Music in a band, orchestra instrument, or guitar*	32
MUSC 432-433 *Methods and Pedagogy*	2
MUSC 488 *Recital*	2
Chamber Music	4
Major Ensemble	8
Total	**48**
Music Supportive Courses	
MUSC 189 Convocation (six semesters)	0
MUSC 177 *Introduction to Music Listening*	1
MUSC 200 *Conducting*	2
MUSC 270-271 *Music Literature*	6
MUSC 161, 163, 261, 263 *Aural Theory*	8
MUSC 162, 164, 262, 264 *Written Theory*	8
MUSC 130-135 *Piano Class*	8
Total	**33**
General Studies	
UNIV 101	1
ENGL 101-102 *Composition and Rhetoric*	6
MATH	3
Cluster A Courses	6
Cluster B Courses	12
Cluster C Courses	11-12
Total	**39-40**
Music Electives	
Music Electives (any area)	4
Theory Electives	6
Music History Elective	3
Total	**13**
Grand Total	**133-134**

Performance Curriculum: Organ

In addition to the required proficiency level ten in organ, this curriculum also requires achievement of proficiency level five in piano before graduation. At least six of the eight semesters of required participation in a major ensemble must be as a member of a choral group (Music 102 or 105). Three upper-level recitals are also required for graduation.

Required Courses	Hrs.
Major Area	
MUSC 118 *Applied Music Piano*	8
MUSC 119 *Applied Music Pipe Organ*	32
MUSC 432-433 *Methods and Pedagogy* (organ)	2
MUSC 434-435 *Repertoire*	2
MUSC 488 *Recital*	2
Major Ensemble	8
Total	**54**
Music Supportive Courses	
MUSC 189 *Convocation* (six semesters)	0
MUSC 177 *Introduction to Music Listening*	1
MUSC 270-271 *Music Literature*	6
MUSC 200 *Conducting*	2
MUSC 161, 163, 261, 263 *Aural Theory*	8
MUSC 162, 164, 262, 264 *Written Theory*	8
Theory Electives	6
Music History Elective	3
Total	**34**

General Studies
- UNIV 101 1
- ENGL 101-102 *Composition and Rhetoric* 6
- MATH 3
- Cluster A Courses 6
- Cluster B Courses 12
- Cluster C Courses 11-12
- **Total 39-40**

Electives
- Music Electives (in any area) 10
- **Total 10**

Grand Total 137-138

Performance Curriculum: Piano (Traditional Emphasis)

Proficiency level ten and three solo upper-level recitals are required for graduation.

Required Courses	**Hrs.**
Major Area	
MUSC 118 *Applied Music* (piano)	32
MUSC 432-433 *Methods and Pedagogy* (piano)	4
MUSC 434-435 *Repertoire,* (piano)	4
MUSC 488 *Recital*	2
Major Ensemble	2
Chamber Music, (Must be performed on a keyboard instrument.)	2
Total	**46**
Music Supportive Courses	
MUSC 189 *Convocation* (six semesters)	0
MUSC 177 *Introduction to Music Listening*	1
MUSC 270-271 *Music Literature*	6
MUSC 200 *Conducting*	2
MUSC 161, 163, 261, 263 *Aural Theory*	8
MUSC 162, 164, 262, 264 *Written Theory*	8
Theory Electives	6
Music History Elective	3
Total	**34**
General Studies	
UNIV 101	1
ENGL 101-102 *Composition and Rhetoric*	6
MATH	3
Cluster A Courses	6
Cluster B Courses	12
Cluster C Courses	12-13
Electives	
Music Electives (from any area)	8
Chamber Music Electives	2
Major Ensemble or Chamber Music Electives	2
Total	**52-53**
Grand Total	**132-133**

Performance Curriculum: Piano (Coaching/Accompanying Emphasis)

Admission only by approval of the piano faculty. Required for graduation: coach and accompany under supervision, two full voice recitals, one string recital, one recital of another instrument (clarinet, flute, oboe, horn, etc.); coach, prepare musically, and accompany in performance two scenes from standard-repertory operas in their original languages (scenes should involve a minimum of two people and have some dramatic development). A proficiency level of ten is required. No solo performances on upper-level recitals are required.

Required Courses	Hrs.
Major Area	
MUSC 118 *Applied Music Piano*	32
MUSC 432-433 *Methods and Pedagogy* (piano)	4
MUSC 434-435 *Repertoire* (piano)	4
MUSC 488 *Recital*	2
Major Ensemble	2
Total	**44**
Music Supportive Courses	
MUSC 189 Convocation (six semesters)	0
MUSC 177 *Introduction to Music Listening*	1
MUSC 270-271 *Music Literature*	6
MUSC 200 *Conducting*	2
MUSC 161, 163, 261, 263 *Aural Theory*	8
MUSC 162, 164, 262, 264 *Written Theory*	8
Total	**25**
Coaching and Accompanying Courses	
MUSC 104 *Introduction to Opera Theatre*	6
MUSC *Chamber Music* (as an accompanist)	4
MUSC 169 *Diction*	8
MUSC 434-435 *Repertoire* (voice)	4
Total	**22**
General Studies	
UNIV 101	1
ENGL 101-102 *Composition and Rhetoric*	6
MATH	3
Cluster A Courses	6
Cluster B Courses	12
Cluster C Courses	11-12
Total	**39**
Electives	
Chamber Music, (Must be performed on a keyboard instrument.)	2
Theory Electives	6
Music History Elective	3
Total	**11**
Grand Total	**141-142**

Performance Curriculum: Piano (Pedagogy Emphasis)

Admission only by approval of the piano faculty. Required for graduation: proficiency level nine, senior recital, and three solo performances on upper-level recitals.

Required Courses	Hrs.
Major Area of Performance	
MUSC 118 *Applied Music Piano*	32
MUSC 488 *Recital*	2
Chamber Music (At least two semesters must be performed on a keyboard instrument.)	4
Major Ensemble	2
Total	**40**
Music Supportive Courses	
MUSC 189 *Convocation* (six semesters)	0
MUSC 177 *Introduction to Music Listening*	1
MUSC 270-271 *Music Literature*	6
MUSC 200 *Conducting*	2
MUSC 161, 163, 261, 263 *Aural Theory*	8
MUSC 162, 164, 262, 264 *Written Theory*	8
Total	**25**

Pedagogy Courses
- MUSC 382 *Music Education* ... 3
- MUSC 492 *Directed Music Studies: Pedagogy Project* ... 2
- MUSC 430 *Piano Class Methods and Materials* ... 3
- MUSC 431 *History of Keyboard Pedagogy and Technique* ... 3
- MUSC 432-433 *Methods and Pedagogy (Piano)* ... 4
- MUSC 434-435 *Repertoire (Piano)* ... 4
- **Total** ... **19**

General Studies
- UNIV 101 ... 1
- ENGL 101-102 *Composition and Rhetoric* ... 6
- MATH ... 3
- Cluster A Courses ... 6
- Cluster B Courses ... 12
- Cluster C Courses ... 11-12
- **Total** ... **39-40**

Electives
- Chamber Music ... 2
- Theory Electives ... 6
- Music History Elective ... 3
- Total ... 11

Grand Total ... **134-135**

Performance Curriculum: Piano (Jazz Emphasis)

Admission only by approval of the piano faculty. (Limited to those students with experience and a demonstrated ability in the area of jazz improvisation.) Required for graduation: proficiency level nine, senior recital (no more than one-half of program consisting of jazz), and three solo upper-level recital performances.

Required Courses **Hrs.**

Major Area
- MUSC 112 *Applied Music (Jazz)* ... 8
- MUSC 118 *Applied Music (Piano)* ... 24
- MUSC 285-286 *Beginning and Advanced Improvisation* ... 4
- MUSC 432-433 *Methods and Pedagogy (Piano)* ... 4
- MUSC 434-435 *Repertoire (Piano)* ... 4
- MUSC 488 *Recital* ... 2
- Chamber Music (must perform jazz piano) ... 6
- Major Ensemble ... 2
- **Total** ... **54**

Music Supportive Courses
- MUSC 189 *Convocation* (six semesters) ... 0
- MUSC 177 *Introduction to Music Listening* ... 1
- MUSC 270-271 *Music Literature* ... 6
- MUSC 200 *Conducting* ... 2
- MUSC 161 163, 261, 263 *Aural Theory* ... 8
- MUSC 162, 164, 262, 264 *Written Theory* ... 8
- Theory Electives ... 6
- Music History Elective ... 3
- **Total** ... **34**

General Studies
- UNIV 101 ... 1
- ENGL 101-102 Composition and Rhetoric ... 6
- MATH ... 3
- Cluster A Courses ... 6
- Cluster B Courses ... 12
- Cluster C Courses ... 11-12
- **Total** ... **39-40**

Electives
Music Electives (from any area) 4
Grand Total **131-132**

Performance Curriculum: Voice

In addition to the required proficiency level ten in voice, a student completing this curriculum must also achieve proficiency level three in piano before graduation. One year of Italian, French, or German is required. Three solo upper-level recitals are required.

Required Courses	**Hrs.**
Major Area	
MUSC 104 *Opera Theatre*	4
MUSC 102 or 105 *Choral Ensemble* (*or* 2 hr. in MUSC 183G-183H MUSC 147-149)	8
MUSC 127 *Applied Music (Voice)*	32
MUSC 169 *Diction*	8
MUSC 432-433 *Methods and Pedagogy (Voice)*	2
MUSC 434-435 *Repertoire (Voice)*	4
MUSC 488 *Recital*	2
Total	**60**
Music Supportive Courses	
MUSC 189 *Convocation (six semesters)*	0
MUSC 177 *Introduction to Music Listening*	1
MUSC 270-271 *Music Literature*	6
MUSC 200 *Conducting*	2
MUSC 161, 163, 261, 263 *Aural Theory*	8
MUSC 162, 164, 262, 264 *Written Theory*	8
MUSC 130-135 *Piano*	8
Total	**33**
General Studies	
UNIV 101	1
ENGL 101-102 *Composition and Rhetoric*	6
MATH	3
Cluster A Courses (must be one year of French, German, or Italian)	9
Cluster B Courses	12
Cluster C Courses	11-12
Total	**42-43**
Electives	
Theory Electives	6
Music History Elective	6
Total	**12**
Grand Total	**147-148**

Performance Curriculum: Woodwinds

If you are a performance major whose major instrument is in the woodwind family and you show strong performance ability on another woodwind instrument, you may qualify for the performance curriculum in woodwinds. Approval for admission to this curriculum will not be given by the woodwind faculty until after the first year of study, at which time you must achieve an appropriate level on three of the five woodwind instruments. In addition to the senior recital (which may be given on more than one instrument), you must present three solo upper-level student recital performances, one on each of the three major instruments. Proficiency level requirements for this curriculum are:

- A primary major woodwind instrument—proficiency level nine.
- Two secondary major woodwind instruments—proficiency level seven.
- Two minor woodwind instruments—proficiency level four.
- Piano—proficiency level two.

Required Courses	Hrs.
Major Area	
MUSC 106,108,110, 115 or 120 *Applied Music*	42
MUSC 432-435 *Methods and Pedagogy*	2
MUSC 488 *Recital*	2
Chamber Music	6
Major Ensemble	8
Total	**60**
Music Supportive Courses	
MUSC 189 *Convocation* (six semesters)	0
MUSC 127 *Introduction to Music Listening*	1
MUSC 270-271 *Music Literature*	6
MUSC 200 *Conducting*	2
MUSC 161, 163, 261, 263 *Aural Theory*	8
MUSC 162, 164, 262, 264 *Written Theory*	8
MUSC 130-135 *Piano Class*	4
MUSC 265 and 266 *Instrumentation, Orchestration, Arranging*	4
Total	**33**
General Studies	
UNIV 101	1
ENGL 101-102, *Composition and Rhetoric*	6
MATH	3
Cluster A Courses	6
Cluster B Courses	12
Cluster C Courses	11-12
Total	**39-40**
Electives (9 Credits)	
Theory Electives	6
Music History	3
Total	**9**
Grand Total	**141-142**

Bachelor of Music with a Major in Jazz Studies

Admission only by approval of jazz area faculty. Proficiency level ten in jazz performance and level five in classical performance are required for graduation.

Required Courses	Hrs.
Major Area	
MUSC 106-127 *Applied Music*	32
MUSC 285 *Intro to Jazz Improvisation*	2
MUSC 286 *Advanced Jazz Improvisation*	2
MUSC 488 *Recital*	2
Chamber Music (must be in jazz ensembles)	5
Large Ensemble, or Music 149 *Chamber Accompaniment*	3
Total	**46**
Music Supportive Courses (42 credits, 34 credits for keyboard performers)	
MUSC 189 Convocation (six semesters)	0
MUSC 177 *Introduction to Music Listening*	1
MUSC 270-271 *Music Literature*	6
MUSC 200 *Conducting*	2
MUSC 161, 163, 261, 263 *Aural Theory*	8
MUSC 162, 164, 262, 264 *Written Theory*	8
MUSC 130-135 *Piano Class* (not required for keyboard performers)	8
MUSC 475 *History of Jazz*	3
MUSC 480 *Arranging Small Jazz Ensemble*	2
MUSC 481 *Arranging Large Jazz Ensemble*	2
MUSC 468 *Jazz Harmony*	2
Total	**42 or 34**

General Studies
- UNIV 101 1
- ENGL 101-102 *Composition and Rhetoric* 6
- MATH 3
- Cluster A Courses 6
- Cluster B Courses 12
- Cluster C Courses 11-12
- **Total** **39**

Electives
- Music Electives (in any area) 8

Grand Total **135-136**
(keyboard performers: 126-127)

Bachelor of Music with a Major in Composition

A composition major should enter as a freshman having achieved proficiency level four on the major instrument, and must complete proficiency level eight on that instrument before graduation. If piano is not the major instrument, the student must achieve a level four on piano. The student must reach level four before earning four credits: the remaining credits are treated as free electives. Piano majors reduce total curricular credits by four. At least a B average in the required freshman and sophomore theory courses (MUSC 161-164, 261-264) or the consent of the coordinator of theory/composition is required for continuation in this curriculum. Another language may be substituted for the indicated French, German, or Italian with the approval of the coordinator of theory/composition. The major project (MUSC 467) must be in composition. Majors in this curriculum must present two solo performances on the major instrument in upper-level recitals before graduation.

Required Courses **Hrs.**

Major Area
- MUSC 160 *Introduction to Composition* 4
- MUSC 265 *Instrumentation* 2
- MUSC 266 *Orchestration and Band Arranging* 2
- MUSC 460 *Upper Division Composition* 8
- MUSC 461-462 *Counterpoint* 4
- MUSC 463 or 464 *Analysis* 4
- MUSC 467 *Major Project in Composition* 2
- MUSC 465-466 *Electronic Music* 4
- MUSC 488 *Recital* 2
- **Total** **32**

Music Supportive Courses
- MUSC 189 *Convocation* (six semesters) 0
- MUSC 177 *Introduction to Music Listening* 1
- MUSC 270-271 *Music Literature* 6
- MUSC 200 *Conducting* 2
- MUSC 161, 163, 261, 263 *Aural Theory* 8
- MUSC 162, 164, 262, 264 *Written Theory* 8
- MUSC 130-135 *Secondary Piano* (if piano is not principal) 4
- MUSC 183-183H, 100-105 or 140-149 (at least 4 hrs. in 183, 183A, 100-105) 8
- MUSC 106-127 *Principal Performance Studies* 16
- MUSC 474 *Music of the Twentieth Century* 3
- **Total** **56**

General Studies (47-48 Credits)
- UNIV 101 1
- ENGL 101-102 *Composition and Rhetoric* 6
- MATH 3
- Cluster A Courses, (must include two years of French, German, or Italian plus three credits in addition to MUSC 270-271); philosophy, religion, etc.) 15

Cluster B Courses 12
Cluster C Courses 11-12
Total 48-49
Electives
Music Electives (from any area) 2
Music History Elective 3
Total 5
Grand Total 141

Bachelor of Music with a Major in Music History

A music history major should enter as a freshman having achieved a proficiency level of three on the student's major instrument, and must complete proficiency level seven on that instrument before graduation. If piano is not the major instrument, the student must achieve a level four on piano. A student wishing to substitute a foreign language other than French, German, or Latin may do so only with the consent of the coordinator of music history and literature. The major project (MUSC 467) must be in music history. Majors in this curriculum must present two solo performances on the major instrument in upper-level recitals before graduation.

Required Courses **Hrs.**
Major Area
MUSC 177 *Introduction to Music Listening* 1
MUSC 270-271 *Music Literature* 6
MUSC 148 *New Music Ensemble* 2
MUSC 492 *Directed Music Studies* 2
MUSC 492 *Directed Music Studies: Introduction to Musical Bibliography* 3
MUSC 474 *Music of the Twentieth Century,* 3 hr.
MUSC History Electives (from 470-473, 476) 6
MUSC 475 *History of Jazz* 3
MUSC 149Z *Collegium Musicum* 2
MUSC 467 *Major Project in Music History* 2
Total 27
Music Supportive Courses (63 credits, 51 Credits Keyboard Performers)
MUSC 189 Convocation (six semesters) 0
MUSC 200 *Conducting* 2
MUSC 161, 163, 261, 263 *Aural Theory* 8
MUSC 162, 164, 262, 264 *Written Theory* 8
MUSC 130-135 *Secondary Piano* (if piano is not principal) 12
MUSC 183, 183A, 100-105 *Large Ensemble* 4
MUSC 106-127 *Principal Performance Studies* 16
MUSC 360 *Composition* 4
MUSC 265 *Instrumentation* 2
MUSC 461-462 *Counterpoint* 4
MUSC 463 or 464 *Analysis* 3
Total ..... 63 or 51
General Studies
UNIV 101 1
ENGL 101-102 *Composition and Rhetoric* 6
MATH 3
Cluster A Courses (must include two years of French, German, or Italian plus three credits in addition to Music 270-271) 15
Cluster B Courses 12
Cluster C Courses 11-12
Total 48
Grand Total 138-139
(keyboard performers: 128-129)

Bachelor of Arts Degree

The bachelor of arts in music provides students with the opportunity to major in music while pursuing a broad liberal arts education. Depending upon the courses taken beyond those required for the major, one may prepare for a variety of careers, not just those associated with music. To enter this program, in addition to being admitted to the University, you must meet audition requirements on one of the following: a band or orchestral instrument, guitar, organ, piano, or voice. Unless otherwise specified, general College of Creative Arts and University regulations apply. Three principal areas of coursework are required, as shown in the following outline:

Required Courses	**Hrs.**
General Education	
UNIV 101	1
ENGL 101-102 *Composition and Rhetoric*	6
MATH	3
Cluster A Courses, (in addition to foreign language & music courses)	12
Cluster B Courses	12
Cluster C Courses	11-12
Foreign Language	12
Non-Music Electives	18-25
Total	**75-82**

Note: No music courses may be included in Cluster A. Foreign language study, consisting of twelve credits in a single language, is in addition to Cluster requirements. Every student must satisfy the foreign culture/ gender/minority studies requirement.

Musicianship	
Literature (MUSC 177, 270, 271 WR)	7
Theory (MUSC 161, 162, 163, 164, 261, 262, 263, 264)	16
Upper-Level Music Electives (in theory, composition, history or lit.)	3-6
Total	**26-29**
Performance and Music Electives	
Ensembles (Music 100-105, 140-149, 150-159, 183-183 H)	4
Major Performance Area (Music 106-127)	16
Performance Elective	0-4
Total	**20-24**
Grand Total	**128**

You must attain a proficiency in your major performance area suitable for public performance (at least level five). Secondary piano proficiency is not required. Two solo upper-level appearances and two semesters of Music 189 *Music Convocation* are required. If you do not make satisfactory progress in achieving the expected performance proficiency, you will be discontinued.

Music Minor

The music minor allows students in any undergraduate major who have competency in music to receive official transcript recognition for their music studies at WVU. The music minor reflects a minimum of 18 hours of study in the areas of music history, theory, and performance.

The intention to declare a minor in music should occur no later than the semester prior to the student's junior year. Check sheets with the requirements for minors are available in the College of Creative Arts Student Records Office, with the advisor for music minors, or on the Division of Music's web site. It is the responsibility of the student to obtain information about the minor and to complete the required courses.

Admission to this program is based on two criteria: a performance audition (vocal or instrumental), and the availability of teaching time in the particular applied studio. The entering performance level must be at least a level three.

Successful completion of the music minor is based on a minimum 2.5 grade point average in the selected music courses, and improvement in the student's performance skills as assessed by the music faculty in music juries (performance final examinations).

At the time of application for graduation, the student must request certification for the minor. Successful completion of the requirements for a formal minor in music will be recorded on the student's official transcript by the student's major degree program.

Division of Theatre and Dance

Margaret A. McKowen, M.F.A., Chair, Costume Design

Degrees Offered

Bachelor of Arts
Major in Theatre
Bachelor of Fine Arts
Major in Theatre (Acting, Puppetry/Creative Dramatics, Design and Technical Theatre)

Accreditation

The Division of Theatre and Dance and its programs in theatre are fully accredited by the National Association of Schools of Theatre (NAST).

Nature of Program

The Division of Theatre and Dance offers an intensive training program for the student who seeks artistic growth and development. The four-year course of study, leading to the bachelor of fine arts (B.F.A.) degree, is designed for students who intend to pursue professional theatre careers, or who may enter other fields where theatre skills are desirable.

The theatre major may choose from among several different areas of emphasis, each of which provides a well-rounded knowledge of the art as well as an opportunity to specialize. The various curricula combine formal classes in theory with practical application and experience in the division's theatre, studio, and laboratory areas.

A bachelor of arts degree in visual and performing arts also is offered with an emphasis in theatre.

Performances

The division annually produces six major productions in its two main performance areas, the Gladys G. Davis Theatre and the Lyle C. Clay Concert Theatre. These productions provide practical experience for all theatre students and serve the community audience a balance of classic and contemporary drama.

Young People's Theatre: Theatre majors, under the direction of a faculty member, operate a complete puppet theatre program. The division's Puppet Mobile tours the state from September through April. Creative dramatics and children's theatre are also offered.

The Vivian Michael Davis Laboratory Theatre produces five or six new or experimental works each year in the intimate 75-seat classroom theatre, free of charge.

The division presents one major dance concert each year. There are also other performance opportunities scheduled off-campus.

Entrance Requirements

Upon entrance, students must comply with the general regulations of the University concerning degrees, satisfy all entrance and divisional requirements, and complete one of the curricula of the Division of Theatre and Dance with a 2.0 (C) grade point average.

For admission to the junior year of the Division of Theatre and Dance, a student must have established a 2.0 (C) grade point average. Transfer students must establish transfer credit from other institutions during the first semester in which they are enrolled in the Division of Theatre and Dance.

Students are responsible for correctly fulfilling all requirements. Each student should review the course requirements both before and after every registration period so that errors or omissions will be detected immediately.

Graduates of the Division of Theatre and Dance are employed in professional theatre, radio, television, and film. Others have chosen careers in fashion design, commercial sales, makeup, lighting design and installation, law, and positions in the public arena. Undergraduates are frequently offered graduate student positions with leading University training programs offering M.F.A. study.

Theatre Curricula

Students may select an area of emphasis in acting, design and technical theatre, or creative dramatics/puppetry offered through the bachelor of fine arts degree. General theatre studies are offered through the bachelor of arts degree.

Teacher Certification

Although there is no teacher certification with a specialty in theatre, students planning to teach theatre at the high school level will pursue certification in oral communication, which may include coursework in theatre.

Acting

The first two years of the program are considered probationary. Admission to the junior year (the studio program) is carefully limited to maintain a nucleus of talented actors with balanced skills and abilities. The studio program is structured as a closed program, open only by invitation from the acting faculty, and from which one may be dismissed.

Theatre Minor/Dance Minor

The Division of Theatre and Dance offers two separate minor programs.

The theatre minor allows students in any undergraduate major who might have an interest in theatre to receive official transcript recognition of their theatre studies at WVU. The theatre minor reflects 18 hours of study in all areas of the theatre including acting, design and technology, creative dramatics, and theatre history and criticism. Courses should be taken as follows in each of three areas: (History and Theory: 6 cr.) THET 112 and THET 361, 362, or 363; (Performance: 3 cr.) THET 102 or 144; (Production: 3-4 cr.) THET 110, 111, 220, or 314; (Electives: 6 cr.) DANC 102, THET 143, 225, 240, 242, 244, 302,400, 404, 461, or 462.

The dance minor is intended for any WVU undergraduate major who has an interest in the study of basic dance methods. The dance minor requires 19 structured hours of dance studies in all areas of dance performance. Courses include technique classes in modern, jazz, and ballet, and fundamental classes in production, choreography, and dance history. Courses should be taken in the following order: DANC 102, 160, 131, 142, 362, 371, THET 314, 242.

A student must declare his or her intention to complete a minor in theatre and/or dance at the College of Creative Arts Records Office or at the Division of Theatre and Dance offices. It is the responsibility of the student to obtain information about the minor and to complete all of the required courses.

Minors are welcome to audition for and participate in all division productions. Students who wish to participate in the Orchesis Dance Ensemble must be officially registered with the division as a dance minor.

At the time of application for graduation, the student must indicate that he or she wishes to be certified as a minor. Successful completion of the minor will be recorded on the student's official transcript by the student's major degree program.

B.A. Of Visual And Performing Arts—Theatre Emphasis

Students pursuing the bachelor of arts are those interested in a program that takes them through a more traditional liberal arts degree program. Students are responsible for the same University requirements found in all other degree programs. For the theatre emphasis, the following course structure is required:

- Foreign language: 12 credits.
- Non-theatre electives: 18 credits required. Students will often take courses that support studies in theatre.
- Theatre and dance studies: 30 credits to include: DANC 102 (*ntro. to Dance Tech.*, THET 112 *Orientation to Theatre*, 144 *Acting*, 113 *Stage Management*, 30 *Directing*, 314 *Production and Design*, 361 *Classic Theatre to 1650*), 362 *European and American Theatre to 1850*, 363 *Modern and Contemporary since 1850*, 461 *Creative Dramatics* or 462 *Puppetry*, and 401 *Capstone Experience.*
- Practicum courses: 3 credits to include THET 400 (repeat three times).
- Theatre electives: 12-13 credits. Recommended theatre electives include: THET 191C *Freshman Directing Workshop*-(1 cr), 491 *Professional Field Experience*, 245 *Advanced Acting Studio.*

Bachelor of Fine Arts Degree Requirements

Due to scheduling and availability, courses may not necessarily be offered in the sequence listed below. However, students are required to follow this course of study as closely as possible in order to complete the program in the outlined four-year period.

Acting

First Year

First Semester	Hrs.
THET 110 *Stagecraft or*	4
THET 111 *Costuming*	
THET 144 *Acting or*	3
THET 143 *Frshmn. Direct. Wkshp*	1
and	
DANC 102	2
THET 112 *Orientation*	3
Cluster A	3
Cluster B	3
UNIV 101	1
Total	**17**

Second Semester	Hrs.
THET 111 *Costuming or*	4
THET 110 *Stagecraft*	
THET 143 *Frshmn. Direct. Wkshp*	1
and	
DANC 102 (with THET 143 only)	2
or	
THET 144 *Acting*	3
ENGL 101	3
Cluster C	4
Math Skills	3
Total	**17**

Second Year

First Semester	Hrs.
THET 240 *Vocal Techniques or*	2
THET 242 *Movement*	
Cluster C w/lab	4
THET 244 (or free elective)	3
THET 200 *SPTP: Sophom.Crew*	1
Cluster B	3
ENGL 102	3
Total	**16**

Second Semester	Hrs.
THET 240 *Vocal Techniques or*	2
THET 242 *Movement*	
THET 221 *Theatre Makeup*	3
Free Elective (or THET 244)	3
THET 200 *SPTP: Sophom.Crew*	1
Cluster A	3
Cluster B	3
Total	**15**

Third Year

First Semester	Hrs.
THET 340 *Intermediate Vocal Techniques 1*	2
THET 342 *Intermediate Stage Movement 1*	2
THET 344 *Acting Studio 1*	3
THET 346 *Studio Scene Study 1*	1
THET 230 *Text Analysis*	3
THET 302 *Directing or* Cluster C	3
THET 361 *Classic Theatre to 1700*	3
THET 400 *Thet. Performance Rehersal Lab*	1
Total	**18**

Second Semester	Hrs.
THET 341 *Intermediate Vocal Techniques 2*	2
THET 343 *Intermediate Stage Movement 2*	2
THET 362 *Acting Studio 2*	3
THET 362 *European & American Theatre*	3
THET 493G *Special Topics Performance*	2-3
Cluster A	3
Cluster C *or* THET 302 *Directing*	3
Total	**18-19**

Fourth Year

First Semester	Hrs.
THET 440 *Adv. Vocal Tech.*	1
THET 442 *Adv. Stg. Movemnt. 1*	2
THET 444 *Adv. Acting Studio 1/* Capstone 443	2
THET 446 *Studio Scene Study 1*	1
THET 363 *Mdrn. Thet. 1850-1940*	3
THET 400 *Thet. Perform Reh. Lab*	1
Cluster A	3
Total	**13**

Second Semester	Hrs.
THET 441 *Adv. Vocal Tech. 2*	2
THET 443 *Adv. Stg. Movemnt. 2*	1
THET 445 *Adv. Acting Studio 2/* Capstone	3
THET 493G *Spcl. Topics Perform*	3
THET 400 *Thet. Perform Reh. Lab*	1
Cluster B	3
Free Elective	3
Total	**16**

Puppetry/Creative Dramatics

First Year

First Semester	Hrs.
THET 112 *Orientation*	3
ENGL 101	3
Cluster A	3
THET 110 *Stagecraft or* THET 111 *Costuming*	4
Cluster B	3
UNIV 101	1
Total	**17**

Second Semester	Hrs.
THET 144 *Acting*	3
THET 110 *Stagecraft or* THET 111 *Costuming*	4
Cluster A	3
MUSC 181	2
THET 242 *Movement*	2
Cluster C	3
Total	**17**

Second Year

First Semester	Hrs.
THET 321 *Props or* THET 220 *Lighting*	3
THET 221 *Makeup*	3
THET 200 *Practicum*	1
ENGL 102	3
Cluster A	3
Cluster B	3
Total	**16**

Second Semester	Hrs.
THET 321 *Props or* THET 220 *Lighting*	3
THET 200 *Practicum*	1
Cluster A	3
THET 361 *Classic Theatre*	3
Math Skills	3
Cluster C	3
Total	**16**

Third Year

First Semester	Hrs.
THET 400 *Thet. Perf. Reh. Lab*	1
THET 302 *Directing*	3
THET 492B *Child. Theatre*	3
THET 113 *Stage Management*	3
THET 362 *18th/19th Cent. Thet.*	3
CD & FS 110 (Cluster B)	3
Total	**16**

Second Semester	Hrs.
THET 400 *Thet. Perf. Reh. Lab*	1
THET 461 *Creat. Dramatics*	3
THET 363 *Modern Theatre*	3
Free Elective	3
LS 403	3
Cluster C	3
Total	**16**

Fourth Year

First Semester	Hrs.
THET 400 *Practicum or*	1
THET 401 *Capstone*	3
THET 462 *Puppetry*	3
THET 404 *Playwriting*	3
Free Elective	3
Free Elective	3
Cluster C with Lab	4
Total	**17-19**

Second Semester	Hrs.
THET 492B *(Sp. Problems)*	3
THET 400 *Practicum or*	1
THET 401 *Capstone*	
THET 403 *Adv. Play Directing*	3
THET Elective	3
Cluster B	3
Theatre Elective	3
Total	**16**

Design and Technology

First Year

First Semester	Hrs.
UNIV 101 *Orientation*	1
THET 102 *Acting*	3
THET 112 *Theatre Concepts*	3
THET 110 *Fundamtls. of Stgcraft*	4
or	
THET 111 *Fundamtls. of Cost*	
ENGL 101	3
Cluster A	3
Total	**17**

Second Semester	Hrs.
THET 110 *Fundamtls. of Stgcraft*	4
or	
THET 111 *Fundamtls. of Cost*	
Math Skills	3
ENGL 102	3
Cluster C	3
Free Elective	3
Total	**16**

Second Year

First Semester	Hrs.
THET 200 *Dir. Thet. Activities*	1
THET 220 *Fundamtls. of Lighting*	3
THET 222 *Drafting*	3
THET 225 *Intro. to Design I*	3
THET 293N *Dir. Thet. Activities*	1
Intermediate Tech. Course	3
Cluster A	3
Total	**17**

Second Semester	Hrs.
THET 200 *Dir. Thet. Activities*	1
THET 329 *Computer Aided Dsgn*	3
THET 226 *Intro. to Design II*	3
Cluster C	3
Intermediate Tech. Course	3
Cluster B	3
Total	**16**

Third Year

First Semester	Hrs.
THET 327 *Hist.of Costm Décor I*	3
THET 400 *Rehearsal & Perform.*	1
Theatre History	3
Advanced Technical Course	3
Advanced Design	3
Cluster B	3
Total	**16**

Second Semester	Hrs.
THET 328 *Hist.of Costm Décor II*	3
THET 400 *Rehearsal & Perform*	1
Theatre History	3
Advanced Design	3
Advanced Technical Course	3
Cluster C w/lab	4
Total	**17**

Fourth Year

First Semester	Hrs.
THET 400 *Rehearsal & Perform.*	1
or	
THET 401 *Capstone*	3
THET *Advanced Tech. Course*	3
Advanced Design	3
Cluster B	3
Theatre History	3
Cluster C	3
Total	**16-18**

Second Semester	Hrs.
THET 400 *Rehearsal & Perform.*	1
or	
THET 401 *Capstone*	3
Cluster B	3
THET 302 *Directing*	3
Free Elective	3
Free Elective	3
Cluster A	3
Total	**16-18**

Bachelor of Visual and Performing Arts—Theatre Emphasis

First Year

First Semester	Hrs.	Second Semester	Hrs.
THET 112 *Orientation to Theatre*	3	DANC 102 *Intro. to Dance Tech.*	2
THET 144 *Acting*	3	THET 314 *Production and Design*	3
Cluster B	3	THET Elective *(Dir. Workshop)*	1
ENGL 101	3	Cluster A	3
Foreign Language 101	3	Math Skills	3
UNIV 101	1	Foreign Language 102	3
Total	**16**	**Total**	**15**

Second Year

First Semester	Hrs.	Second Semester	Hrs.
THET 113 *Stage Management*	1	THET Elective	3
THET Elective	3	Fine Arts Non-Theatre	3
Elective	3	Cluster B	3
ENGL 102	3	Cluster C with lab	4
Foreign Language 201	3	Foreign Language 202	3
Cluster B	3	**Total**	**16**
Total	**16**		

Third Year

First Semester	Hrs.	Second Semester	Hrs.
THET 361 *Classic Thet. to 1700*	3	THET 362 *Euro. and Amer. Thet.*	3
THET 302 *Directing*	3	International	3
Cluster C	3	Elective	3
Cluster A	3	Cluster B	3
THET 400 *Thet. Perf. Reher. Lab*	1	THET 400 *Thet. Perf. Reher. Lab*	1
Elective	3	Cluster A	3
Total	**16**	**Total**	**16**

Fourth Year

First Semester	Hrs.	Second Semester	Hrs.
THET 461 *Creative Dramatics or* THET 462 *Puppetry*	3	THET Elective	3
THET 363 *Mod. and Cont. Thet.*	3	Cluster C	4
Elective	3	Elective	3
THET Elective	1	Elective	3
Cluster A	3	THET 401 Capstone Experience *or* THET 400 *Thet. Perf. Reher. Lab*	3 1
THET 400 *Thet. Perf. Reher. Lab or* THET 401 Capstone Experience	1 3		
Total	**14-16**	**Total**	**14-16**

Bachelor of Arts in Theatre

The B.A. in theatre offers a broad-based option in liberal arts education for students who wish to pursue a program of study less specialized than those offered under the B.F.A. In keeping with the guidelines established by the National Association of Schools of Theatre, approximately 60 percent of the coursework in this emphasis area is in general education outside the discipline of theatre, with the remaining 40 percent of the program falling within the three areas of theatre studies, performance, and theatre electives.

College of Engineering and Mineral Resources

Eugene V. Cilento, Ph.D., Dean
Warren R. Myers, Ph.D., C.I.H., Interim Associate Dean for Academic Affairs
Royce J. Watts, M.S., Associate Dean for Administration
www.cemr.wvu.edu

Degrees Offered

Bachelor of Science in Aerospace Engineering
Bachelor of Science in Chemical Engineering
Bachelor of Science in Civil Engineering
Bachelor of Science in Computer Engineering
Bachelor of Science in Computer Science
Bachelor of Science in Electrical Engineering
Bachelor of Science in Forensic Identification (Biometrics Systems Major)
Bachelor of Science in Industrial Engineering
Bachelor of Science in Mechanical Engineering
Bachelor of Science in Mining Engineering
Bachelor of Science in Petroleum and Natural Gas Engineering

Dual Degrees Offered

Aerospace Engineering and Mechanical Engineering
Computer Engineering and Electrical Engineering
Computer Engineering and Biometrics
Computer Science and Computer Engineering
Electrical Engineering and Biometrics

Nature of Program

The College of Engineering and Mineral Resources (CEMR) undergraduate degree programs are administered through seven departments: chemical engineering; civil and environmental engineering; computer science and electrical engineering; industrial and management systems engineering; mechanical and aerospace engineering; mining engineering; and petroleum and natural gas engineering. All undergraduate programs are recognized by industry as providing excellent preparation for the engineering profession. The curricula have been planned to give students a balanced background in the basic sciences, engineering sciences, engineering analysis, the humanities, and the social sciences. In addition, each curriculum features creative programs in engineering synthesis and design. This blend of science and practice has been developed to give students the tools to solve today's problems and the background to develop the expertise needed for their future success in the profession. Our graduates enjoy a multitude of career opportunities in our nation's most vital industries.

The college is highly committed to providing high-quality programs of engineering science education for all undergraduate students of the college in order to provide a foundation so that graduates of the college will meet the following objectives.

- Graduates will be proficient in their chosen field.
- Graduates will develop and maintain professional ethics and understand the comprehensive impact of engineering solutions on a diverse and global society.
- Graduates will continue in their education on a life-long basis through both formal study and self-directed inquiry.

The faculty uses modern teaching techniques including programmed material, guest lectures by visiting authorities, team projects, and in-house industrial assignments to provide a breadth of training experiences. Teaching laboratories are equipped with modern instruments, machines, and tools to improve and enrich the student's understanding of engineering principles and problems. Numerous computer laboratories and facilities are available for classroom work.

College programs are geared to provide graduates with a sound background upon which to enter the industrial workforce or to pursue graduate study in engineering, medicine, law, or business. A number of industries in West Virginia and the region provide meaningful and financially rewarding summer employment for students. These training opportunities often lead to professional positions upon graduation.

Accreditation

The Accreditation Board for Engineering and Technology (ABET) is recognized by the U.S. Department of Education and the Council on Postsecondary Accreditation (COPA) as the sole agency responsible for accreditation of educational programs leading to degrees in engineering. ABET accomplishes its accreditation mission through one of its commissions, the Engineering Accreditation Commission (EAC). ABET is concerned with the enhancement of the status of the engineer and the engineering profession, and the establishment of criteria and standards for accreditation of engineering programs at colleges and universities. All baccalaureate engineering programs in the College of Engineering and Mineral Resources at WVU are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

Admission Requirements

The College of Engineering and Mineral Resources will admit students to study under one of two distinct programs—general engineering or engineering. The objective is to match the student with a first year curriculum tailored to maximize the learning ability of student. Each program prepares freshmen for study in their intended major and is designed to help ensure their success.

Admission is based on a combination of high school grade point average (unweighted 4.0 scale) and standardized test scores or Math Placement exam scores. The following table summarizes the admission requirements for each program.

Program	Residents	High School GPA	ACT		SAT	
			Composite	Math	Total	Math
Engineering	West Virginia	2.00	22	26	1040	600
	Out-of-State	2.25	22	26	1040	600
General Engineering	West Virginia	2.00	19	20	910	480
	Out-of-State	2.25	22	20	950	480

In addition, students must have high school credits for:

- Four units of English (including grammar, composition, and literature).
- Three units of social studies (including U.S. history).
- Three units of college preparatory mathematics (algebra I and II and geometry).
- Two units of laboratory sciences (including physics, chemistry, biology, or other laboratory courses).

First-Year Engineering Program Curriculum

The engineering program is designed for students who have similar math and science backgrounds so they can effectively work in teams, solve problems, and undertake challenging projects in the *Freshman Engineering Design* course (ENGR 101). To be admitted into the engineering program, a student must satisfy one of the following requirements:

- A math ACT score of at least 26 or a math SAT score of at least 600.
- Qualify to take the calculus course (MATH 155) and the fundamentals of chemistry course (CHEM 115) based on the placement exams.

Engineering Program

First Semester	Hrs.
MATH 155 *Calculus I*	4
CHEM 115 *Fundamtl. of Chem.*	4
ENGR 101 *Fresh. Engr. Design*	2
ENGR 199 *Orientation to Engr.*	1
ENGL 101 *Comp. and Rhetoric*	3
Cluster A/B Elective*	3
Total	**17**

Second Semester	Hrs.
MATH 156 *Calculus II*	4
CHEM 116 *Fundamtl. of Chem.***	4
or Cluster A/B Elective*	3
ENGR 102 *Fresh. Egr. Des. & Anal.*	3
PHYS 111 *General Physics*	4
Total	**17/18**

* Mining engineering students should take GEOL 101 and 102 in place of the Cluster A or B elective. Petroleum and natural gas engineering students should take GEOL 101 in place of the Cluster A or B elective.
** Students intending to pursue a degree in chemical, mining, or petroleum and natural gas engineering *must* take CHEM 116. Students intending to pursue a degree in civil or industrial engineering can take either PHYS 112 (taken in sophomore year) or CHEM 116, but do not need both. Students wishing to pursue a degree in aerospace, biometric systems, computer, electrical, mechanical, aerospace and mechanical dual, or electrical and computer dual do not need CHEM 116.

First-Year General Engineering Program Curriculum

Students whose Math ACT score is less than 26 or whose math SAT score is less than 600 will be admitted to the general engineering program. The general engineering program is tailored for those students who are not ready to take the *Calculus* (MATH 155) course and the *Fundamentals of Chemistry* course (CHEM 115). Based on standardized test scores or the Math Placement exam scores, students would be placed in an algebra, trigonometry, or pre-calculus course.

General Engineering Program

First Semester	Hrs.
MATH 126 and Math 128	6
or Math 129*	4
CHEM 110 *Intro. to Chemistry*	2
ENGR 199 *Orientation to Engr.*	1
PHYS 110 *Engineering Physics*	3
ENGL 101 *Comp. and Rhetoric*	3
Cluster A/B Elective*	3
Total	**15/16**

Second Semester	Hrs.
MATH 155 *Calculus I*	4
CHEM 115 *Fundamtl of Chem*	4
ENGR 101 *Fresh. Engr. Design*	2
Cluster A/B Elective**	6
Total	**16**

*Students taking Math 129 should take Cluster A/B elective.
**Mining engineering students should take GEOL 101 and 102. Petroleum and natural gas engineering students should take GEOL 101 in place of the Cluster A or B elective.

Admission to a Major

During the second semester of the engineering program, all freshman engineering students are encouraged to choose an engineering major. To be admitted into an engineering major, at a minimum a student must successfully complete MATH 155, CHEM 115, ENGR 101, ENGR 199, ENGR 102, ENGL 101, and earn a cumulative GPA of at least 2.0. Each department will assign a faculty advisor to help these students achieve their academic goals. Students not accepted into an engineering major by the end of their third semester will be required to transfer out of the college. Students will not be permitted to enroll in upper-division engineering courses until they have been accepted into a major.

Transfer Students

Students wishing to transfer into the general engineering program from other programs must have a GPA of at least 2.0 in all college work attempted. Students who meet the freshman admission requirements (shown in the table) are eligible to transfer any time. Others must have completed at least one semester of college work and present evidence that they have met the prerequisites to enroll in MATH 155 *Calculus*. Students wishing to transfer into a major must have a GPA of at least 2.0 and have completed ENGR 101, ENGR 199, ENGR 102, MATH 155, CHEM 115, and ENGL 101.

Admission Petitions

Students not meeting the minimum admission and transfer requirements as described above may request to be admitted to the college by written petition to the dean.

Scholarships

The College of Engineering and Mineral Resources and its constituent departments offer several designated scholarships. Certain freshman scholarships require the student to be pursuing a declared major. Recipients of these scholarships will be designated departmental majors in their freshman year.

Curricula

During the first two years, students acquire fundamental knowledge in mathematics, basic sciences, and introductory engineering topics. Engineering design, computer-based experience, and communication skills are integrated throughout the curriculum. In the third and fourth years, the curriculum builds upon the fundamental engineering concepts toward an integrated educational experience, preparing students to pursue a successful professional career and life-long learning. Study in humanities and social sciences is also an integral part of the engineering education, enabling students to understand and appreciate the technological, social, and cultural changes that challenge the world.

Cooperative (Co-op) Education and Internship Programs

The co-op program is available to any student attending a college or university in West Virginia. The co-op opportunity is available to any qualified student interested in pursuing a degree in any of nine engineering majors or computer science. The five-year professional development experience combines practical on-the-job experience with the classroom education of a four-year engineering curriculum. Internships are arranged with an employer for various work periods and may involve an academic semester or summer term.

Dual Degree Majors

The college has formal programs for students wishing to receive two undergraduate degrees simultaneously. The five programs are dual aerospace and mechanical engineering, dual electrical and computer engineering, dual computer engineering and biometrics, dual computer science and computer engineering, and dual electrical engineering and biometrics. Each dual-degree program requires less than one year's additional work over and above that required for a single degree.

Academic Minor

The College of Engineering and Mineral Resources offers a minor in computer science to all undergraduate students. A student must consult with his or her major advisor to develop a scheduling plan for courses that satisfy the requirements for the computer science minor. The requirements for the minor in computer science can be found under the computer science program description. The completed minor will be recorded on the student's permanent transcript.

International Exchange Programs

The college participates in two international exchange programs for undergraduates as well as the International Student Exchange Program (ISEP). These exchanges are with the University of Hertfordshire in England and the University of Aalborg in Denmark. Both of these universities have international reputations for the strength of their instruction in the area of engineering design. Program details vary, but WVU engineering students can obtain full credit for their junior year while studying abroad. Students pay normal WVU tuition, but housing costs to their host institution are not included. At present, the college has organized exchanges for students in civil, computer, electrical, industrial, mechanical engineering, and computer science.

Undergraduate Liberal Studies Program Requirements

All engineering undergraduate students must satisfy the University Liberal Studies Program (LSP) requirements by completing 12 credits of Cluster A courses and 12 credits of Cluster B courses.

- The 12 credit hours in each cluster must include courses taken in three disciplines; two courses must be successfully completed in the same discipline to emphasize depth.
- One three credit-hour course must satisfy the foreign culture, minority, or gender studies requirement.
- If two foreign language courses are chosen to fulfill Cluster A depth requirements, they must be in the same discipline. Language courses in a student's native language may not be used to fulfill Cluster A requirements.
- One MDS course may be used to fulfill Cluster A requirements and one MDS course may be used to fulfill Cluster B requirements.
- Three credit hours of basic military science may be used to fulfill Cluster A requirements and three credit hours of basic military science may be used to fulfill Cluster B requirements.
- Advanced Air Force ROTC students may substitute both USAF 371 and 372 for PSYC 101. They may also substitute both USAF 481 and 482 for a total of three hours of approved political science Cluster B course. No equivalent agreement exists with the Army ROTC.
- The following LSP courses are not approved by the college: PHIL 360, MATH 280, AGEE 101, and SOCA 252.
- ECON 201 and ECON 202 are required Cluster B courses for degree programs in computer engineering, electrical engineering, industrial engineering, and petroleum and natural gas engineering. Students should consult their advisors and familiarize themselves with any additional department cluster course requirements.
- A student may petition through the department to take one advanced-level course from the University-approved courses in fulfillment of the LSP requirement.
- Students and advisors should consult the latest *Schedule of Courses* for the most current list of courses included in the Liberal Studies Program.

Time to Completion of Degree

All undergraduate degree programs in the college are structured so that they can be completed in eight semesters of full-time study. However, students who are not prepared to enter MATH 155 *Calculus* or CHEM 115 in their first semester may not be able to complete an engineering degree within eight semesters. Engineering applicants are strongly urged to take the required prerequisites to calculus and chemistry in the summer before entering WVU or plan on attending summer school after their freshman year in order to avoid delays in their graduation.

Degree Requirements

To be eligible to receive a bachelor's degree, a student is required to complete satisfactorily the number of semester hours of work as specified in the curriculum of the program leading to the degree for which the student is a candidate. Students must achieve an overall 2.0 grade point average and a 2.0 grade point average (2.25 in mining engineering, and petroleum and natural gas engineering) in all courses completed within the student's major department.

Department of Chemical Engineering

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Degree Offered

Bachelor of Science in Chemical Engineering

Curriculum in Chemical Engineering

The chemical engineering curriculum is designed to give graduates a broad background in chemical engineering processes and to prepare them to become practicing engineers. Graduates are prepared for positions in operation, development, design, construction, and management of chemical, environmental, life-science, materials, and other industrial plants. These industries subject raw materials to chemical and physical changes to produce economically desirable products. Students with this background are also prepared for graduate school in engineering and science as well as for any professional school.

The program objectives of the chemical engineering curriculum are:

1. Graduates will be successful in their professional careers, as demonstrated by their abilities to solve important chemical engineering problems, to solve problems in areas different from their training, and to develop new and valuable ideas.
2. Graduates will be able to work in a variety of professional environments, as demonstrated by their abilities to work on teams, to work alone, to provide leadership, to mentor junior co-workers, and to communicate effectively.
3. Graduates will possess professional character, as demonstrated by their ethical behavior, their pursuit of professional registration, and their commitment to safety and the environment.

The program outcomes of the chemical engineering curriculum are as follows:

1. Graduates will understand and be able to analyze entire chemical processes.
2. Graduates will be proficient in the oral and written communication of their work and ideas.
3. Graduates will be proficient in the use of computers, computer software, and computer-based information systems.
4. Graduates will have the ability to learn independently but will also be able to participate effectively in groups.
5. Graduates will be able to design effective laboratory experiments, to perform laboratory experiments, gather and analyze data, and test theories.
6. Graduates will be prepared for a lifetime of continuing education.
7. Graduates will understand the safety and environmental consequences of their work as chemical engineers and be able to design safe processes.
8. Graduates will understand their professional and ethical responsibilities.
9. Graduates will have the broad education necessary to understand the impact of engineering solutions in a global and societal context.

These outcomes are achieved via rigorous individual courses in all basic areas of chemical engineering, basic science, mathematics, and humanities and social sciences.

A flexible electives program allows specialization in areas such as environment and safety, polymers and materials, biological applications, and coal processes.

Practical work on design and synthesis is incorporated into all chemical engineering classes. One element is the series of group design projects that require sophomores and juniors to use their knowledge as it is gained. Another element is the series of individual design projects that require seniors to synthesize their knowledge of chemical engineering and to correct any deficiencies in their knowledge of chemical engineering, and which provide faculty a method of assessing the success of the sophomore and junior years. The third element is a group project in which seniors work under the direction of a student chief engineer on a year-long, comprehensive design. In conjunction with these projects, there are required written and oral presentations and required computer applications integrated throughout the curriculum. Completion of these projects also trains students to work in groups of all sizes and gives them experience in self-directed learning. Additionally, in the senior year, elements of professional practice, ethics, and safety are introduced in the classroom.

The chemical engineering curriculum also contains a significant laboratory component aimed at reinforcing the knowledge gained in the classroom. In addition to basic chemistry and physics laboratories, the chemical engineering laboratories involve simple laboratory experiments or demonstrations in the junior year followed by a two-semester laboratory sequence in the senior year in which the principles of experimental design, laboratory and safety procedures, data analysis, and report writing are stressed.

The chemical engineering department uses an outcomes-assessment plan for continuous program improvement. The design projects, in conjunction with yearly interviews and questionnaires plus follow-up questionnaires after graduation to alumni and employers, provide the measures of learning outcomes. These outcomes-assessment results provide feedback to the faculty to improve teaching and learning processes.

To receive a degree of bachelor of science in chemical engineering, a student must take all of the courses indicated below and must obtain a grade point average of 2.0 or better for all required chemical engineering courses. (If a course is repeated, only the most recent grade received is considered in computing this grade point average. Chemical engineering courses used to satisfy technical or engineering electives are not considered in this grade point average.) This requirement helps assure that the student has demonstrated overall competence in the chosen major. To complete the B.S. degree program in four years, a student must complete approximately 16.5 credit hours per semester.

A typical B.S. degree program which completes degree requirements in four years is as follows.

Chemical Engineering

First year
Common first year as listed on page 108.

Second Year

First Semester	Hrs.
MATH 251 *Multivar. Calculus*	4
CHEM 233 *Organic Chem.*	3
CHEM 235 *Organic Chem. Lab.*	1
PHYS 112 *General Physics*	4
CHE 201 *Matrl. & Energy Bal. 1*	3
ENGL 102 *Comp. & Rhetoric*	3
Total	**18**

Second Semester	Hrs.
MATH 261 *Elem. Diff. Equat*	4
CHE 202 *Matrl. & Energy Bal. 2*	3
CHE 230 *Numerical Methods*	3
Cluster A or B Electives	6
Total	**16**

Third Year

First Semester	Hrs.
CHE 310 *Proc. Fluid Mechanics*	3
CHE 311 *Proc. Heat Trans.*	3
CHE 320 *ChE Thermodynamics*	3
Advanced Science Elective	4
Cluster A or B Elective	3
Total	**16**

Second Semester	Hrs.
CHE 312 *Separation Process*	4
CHE 315 *ChE Transport Analysis*	3
CHE 325 *Chem. Reaction Engrg.*	3
CHE 326 *ChE Reaction Phenom*	3
Engineering Science Elective	3
Total	**16**

Fourth Year

First Semester	Hrs.
CHE 435 *Chem. Process Control*	3
CHE 450 *Unit Operations Lab. 1*	2
CHE 455 *Chem. Process Design 1*	4
Cluster A or B Elective	3
Technical Elective	3
Total	**15**

Second Semester	Hrs.
CHE 451 *Unit Operations Lab. 2*	2
CHE 456 *Chem. Process Design 2*	3
Cluster A or B Electives	6
Advanced Science Elective	3
Engineering Science Elective	3
Total	**17**
Grand Total	**133**

Note: Three hours of lower-division military science can count toward Cluster A requirements and three hours can count toward Cluster B requirements. Electives in junior and senior years must be selected to complete requirements of non-technical electives (24 hrs.), technical electives (three hrs.), engineering science electives (six hrs.), and advanced science electives (seven hrs.). All electives must be selected from a list approved by the Department of Chemical Engineering. A 2.0 grade-point average in required chemical engineering courses is necessary before a student can register for CHE 310, 311, 320, 435, 450, or 455.

Department of Civil and Environmental Engineering

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Degree Offered

Bachelor of Science in Civil Engineering

Curriculum in Civil and Environmental Engineering

Civil engineering historically encompassed all engineering endeavors not associated with military activities. Because of its origin and history, civil engineering still embraces a wide variety of technological areas. These include environmental engineering, hydrotechnical engineering, geotechnical engineering, transportation engineering, and structural engineering.

Civil engineers work with problems that directly impact the health and economic vitality of people and communities. These problems include waste disposal, environmental pollution, transportation systems analysis and design, water resource development, and the design, construction, and rehabilitation of constructed facilities such as dams, bridges, buildings, and highways. Thus, the challenges and opportunities for a civil engineer lie in combining technical competence with a human concern for the applications of technology. To help students to understand their role in the community, to be effective in working with design teams involving other engineers and other professionals, and to be effective in written and spoken communications, the curriculum attempts to give a meaningful educational experience in the humanities, social studies, English, and economics.

The goal of the undergraduate curriculum in civil and environmental engineering is to prepare graduate civil engineers to meet the present and the future infrastructure and environmental needs of society. This requires an education based on scientific and engineering fundamentals as well as one that incorporates experience in engineering design using modern technology. Because the systems they design impact the public directly, civil engineers must be aware of the social and environmental consequences of their designs. Graduates must be prepared to work and communicate with other professionals in a variety of associations and organizations. Ethics and life-long learning are essential components in the education of civil engineers. During the course of study, civil engineering students are given a solid grounding in mathematics, physics, and chemistry. Added to this is extensive development of the fundamentals of materials science, environmental, soils, hydrotechnical, structural, and transportation systems engineering. This broad base of knowledge is provided to insure that civil engineers are educated in all branches of the profession and to permit

continuous learning throughout a professional lifetime. Throughout the program, each student works with an academic advisor in the selection of electives. Specialization in one or more of the branches of civil engineering is possible by selection of a sequence of technical electives during the junior and senior years.

Following are the program educational objectives for graduates:

- Have a strong understanding of basic engineering principles. This includes a sound knowledge of the fundamentals of mathematics, computing, basic science, engineering science, and economics.
- Have a strong understanding of the fundamental principles, scope, and techniques of the major areas of civil engineering.
- Have an appreciation for the relationship of the civil engineering profession to society, industry, government, and the environment, as well as for the basic concepts of professionalism and ethics.
- Have the ability to compete for positions in civil engineering, to achieve professional registration, and to engage in life-long learning.
- Have the ability to work productively in teams developing solutions to engineering problems employing creative thinking, analysis, design, evaluation, and communications.
- Have the ability to communicate at a professional level using oral and written prose and engineering graphics.

To be eligible for graduation in civil engineering, a student must attain a grade point average of 2.0 or better for all civil engineering courses attempted, except for those courses in which a grade of W or WU was received. If a course is repeated, only the last grade received is counted in computing the grade point average, and the course credit hours are counted only once. This requirement assures that the student has demonstrated overall competence in the chosen major.

To complete the B.S. degree program in four years, a student must take approximately 15 to 17 credit hours per semester.

A typical B.S. degree program, which completes degree requirements in four years, is as follows.

Civil and Environmental Engineering

First year
Common first year as listed on page 108.

Second Year

First Semester	Hrs.	Second Semester	Hrs.
MAE 241 *Statics*	3	MAE 243 *Mech. of Mat.*	3
MATH 251 *Calculus*	4	MATH 261 *Diff. Equations*	4
Non-tech Elective[1]	3	CHEM 116 or PHYS 112[2]	4
CE 205 *Survey and CAD*	4	MAE 242 *Dynamics*	3
ENGL 102 *Comp. and Rhet.*	3	ENGL 305 *Sci. and Tech. Writ.*	3
Total	**17**	**Total**	**17**

Third Year

First Semester	Hrs.	Second Semester	Hrs.
CE 361 *Str. Analysis I*	4	CE 322 *Hydrotechnical Engr.*	4
CE 321 *Fluid Mech. for CE*	3	CE 351 *Intro. Soil Mech.*	3
IE 377 *Engr. Econ.*	3	CE 462 or 463 or 464	3
CE 310 *CE Materials*	4	*Concrete, Steel, or Timber Design*	
CE 347 *Envr. Engr.*	3	CE 332 *Intro. Trans. Engr.*	4
Total	**17**	STAT 215 Intro. *to Prob. and Stats.*	3
		Total	**17**

Fourth Year

First Semester	Hrs.
MAE 320 *Thermodynamics*	3
CE 451 or CE 453 *Found. Des. or Earthwork Design*	3
CE Elective[3]	3
Non-tech. Electives[1]	6
Total	**15**

Second Semester	Hrs.
EE 306 Intro. Elect. Inst.	3
Engr./Math/Science Elec.[4]	3
CE Elective[3]	3
Non-tech. Electives	6
Total	**15**

Notes: 1. The non-technical electives must be selected from LSP Cluster A and Cluster B courses. These courses must be selected so as to meet both the University Liberal Studies Program requirements and the College of Engineering and Mineral Resources humanities and social science course requirements. Each student shall select a sequence of courses with the cooperation and approval of the advisor so as to constitute a meaningful program of study in keeping with the student's interests and career goals.
2. If CHEM 116 was taken in the freshman year, take a non-tech. elective.
3. CE electives must be from any of the 400-level civil engineering courses, or for those who qualify, any of the 500-level civil engineering courses.
4. See advisor for list of approved courses.

Lane Department of Computer Science and Electrical Engineering

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Degrees Offered

Bachelor of Science in Forensic Identification
Major in Biometric Systems
Bachelor of Science in Computer Engineering
Bachelor of Science in Computer Science
Bachelor of Science in Electrical Engineering

The department offers undergraduate degrees in computer science, computer engineering, and electrical engineering. It also houses the biometric systems major of the University-level bachelor of science in forensic identification.

Curriculum in Biometric Systems

Bachelor of Science in Forensic Identification
Major in Biometric Systems

Biometric systems are composed of complex hardware and software designed to measure a "signature" of the human body, compare the "signature" to a database, and render a decision for a given application based on the identification achieved from this matching process. Uses of biometric systems for positive personal identification are experiencing rapid growth in such areas as law enforcement, access control, banking, and a wide range of business and administrative systems. In an even broader application context, biometric systems are having a revolutionary impact on health care and the enhancement of the human computer interface including *in vivo* identification of specific human conditions via implantable devices and the automated administration of life-saving medical therapies. The continued rapid advance of integrated sensor, signal/image processing, computer, and mass storage technology promises to extend these applications further into our daily lives with even the most inanimate objects able to identify, interact with, and assist their users.

Biometric systems for personal identification are based upon fundamental biometric features which are typically unique and time invariant, such as features derived from fingerprints, faces, irises, retinas, and voices. Biometrics for biomedical, human computer interface, and other applications may include these but will necessarily extend to a wide range of physiological signals which possess identifiable patterns that may change in time, albeit predictably. The spectrum of usable biometrics is defined by human physiology, the bioengineering implied by their measurement, and the application. As biometric system capabilities and applications evolve, biometrics will extend to any known measurement of the human body.

Biometric identification is a highly interdisciplinary field mixing traditional engineering with the forensic sciences. As a result, the engineering design and development of biometric systems requires knowledge of the biometric as well as the engineering disciplines. Designers work with the physics of the sensor to obtain measurements of the biometric defined by human physiology. Signal and image processing techniques are applied to the sensor signal to extract features usable for identification. Databases combined with artificial intelligence enable rapid storage, retrieval, and pattern matching while decision theory supports the mechanisms whereby systems can provide the needed identification results. Underlying the entire system is a foundation of statistics and mathematics which provides the language for implementing and evaluating biometric technology and systems.

Overview of the Major

The biometric systems major at WVU will provide students with a firm foundation in electrical and computer engineering and computer science meshed with an understanding of biology, physiology, forensics, and the interaction between living and nonliving materials and systems necessary to design, implement, and evaluate biometric systems. This foundation is built on a strong framework of mathematics, statistics, and physical sciences appropriate to biometric systems and complemented by an appropriate general studies component. Areas of emphasis established through choice of specific course sets in the junior and senior year enable students to tailor their degree to follow their interests in key areas of biometric system development. Emphasis areas currently include sensors and circuits, signal processing, statistics, and DNA/molecular biology. Engineering design experiences will be a central part of many of the curriculum's courses beginning in the very first semester of the major and concluding with a capstone design course in the senior year enabling the students to integrate their understanding through application of their core and emphasis area coursework knowledge to realize biometric systems and subsystems of their own design.

Areas of Emphasis

Presently, four specialization paths have been identified for the biometric systems curriculum. Each emphasis area enables students to develop an in-depth technical background in an area of their own choosing which is central to biometric system development. Currently designated areas of emphasis are sensors and circuits, signal processing, statistics, and DNA/molecular biology. Each emphasis area is fulfilled by the successful completion of four courses. Students may obtain at most one emphasis area designation from this four-course set in their degree curriculum. Each emphasis area curriculum is defined by three courses chosen from a set of classes prescribed for that area. At least one of these three courses is a required course. The fourth course of each emphasis area is designated as a free technical elective which may be chosen from the superset of classes collectively defined by all those of all emphasis areas. Successful completion of an emphasis area's requirements is designated on the student's transcript. Students may elect not to choose an emphasis area in which case no transcript designation is received and students complete four courses from the collective list of classes from all emphasis areas.

Curriculum

The required curriculum of the bachelor of science degree in biometric systems is given below in the form of a recommended four-year sequence. The total credit hours required of the major is 139. Four courses (or twelve credits) are devoted to the emphasis areas selected by individual students based upon their educational objectives. Six of the twenty-four credit hours required to satisfy the University cluster requirements have been devoted to economics in order that students may develop an understanding of system engineering economics.

Dual Majors

Dual majors are available in which a student may obtain a B.S. in forensic identification and a B.S. in either computer engineering or electrical engineering in four and one-half years.

Biometric Systems

First Year

First Semester	Hrs.
BIOL 101 *Intro to Biology*	4
MATH 155 *Calculus I*	4
ENGR 101 *Fresh. Design. Engr.*	2
ENGR 199 *Orientation to Engr.*	1
ENGL I01 *Comp and Rhetoric*	3
Hum. & Social Science Elec.	3
Total	**17**

Second Semester	Hrs.
CHEM 115 *Fund. of Chemistry*	4
MATH 156 *Calculus II*	4
CS 110 *Intro. to Computer Science*	4
PHYS 111 *General Physics I*	4
BIOL 493 *DNA to Diversity**	*3*
Total	**19**

Second Year

First Semester	Hrs.
CS 111 *Intro. to Data Structures*	4
EE 221/222 *Intro. Elec. Engr.*	4
MATH 251 *Multivariable Calculus*	4
PHYS 112 *General Physics*	4
Total	**16**

Second Semester	Hrs.
ENGL 102 *Comp and Rhetoric*	3
EE 224/225 *Circuits*	4
MATH 261 *Elem. Diff. Equations*	4
STAT 215 *Prob. and Statistics*	3
CPE 271/272 *Intro. to Digital Log.*	4
Total	**18**

Third Year

First Semester	Hrs.
CPE 310/311 *Microproc. Systems*	4
STAT 316 *Forensic Statistics*	3
EE 327 *Signals & Systems I*	3
EE 425 *Bioengineering*	3
CS 350 *Computer Syst. Concepts*	3
Total	**16**

Second Semester	Hrs.
BIOM 426 *Biometric Systems*	3
EE 465 *Image Processing*	3
MATH 375 *Applied Modern Algebra*	3
Hum. and Social Science Elec.**	3
CS 493 *Computer Security*	3
Total	**15**

Fourth Year

First Semester	Hrs.
BIOM 480 *Senior Design Seminar*	2
Emphasis Course 1	3
Emphasis Course 2	3
ECON 201 *Microeconomics*	3
Hum. and Social Science Elec.	6
Total	**17**

Second Semester	Hrs.
BIOM 481 *Senior Design Project*	3
Emphasis Course 3	3
ECON 202 *Macroeconomics*	3
Hum. and Social Science Elec.	6
Total	**15**
Grand Total	**133**

*Can be deferred.

**One cluster B from the following list: POLS 210, PSYC 101, SOCA 101, or SOCA 332.

Curriculum in Computer Engineering

Degree Offered

Bachelor of Science in Computer Engineering

Computer engineers design, develop, test, and oversee the manufacture and maintenance of embedded computer hardware and software. As such, the computer engineer is part electrical engineer and part computer scientist. Embedded computer systems include applications in the automotive, communications, radio and television, consumer electronics, aircraft, robotics, and health-care industries. In addition, computer engineers design, develop, test, manufacture, and maintain complex systems including digital communications systems such as cell phone networks, computer networks such as the Internet, and system level software such as operating systems and applications software.

The objective of the bachelor's degree program in computer engineering is to produce graduates who have the knowledge, skills, and attitudes that will ensure success in professional positions in business, industry, research, government service, or graduate study as well as professional schools. We carry out this mission by providing our students with a sound education in mathematics and the sciences, a broad foundation in the fundamentals of engineering, elective opportunities to develop expertise in one or more emphasis areas, and the general education necessary to put technical knowledge into perspective. Theoretical work is complemented by an emphasis on the practice of engineering, and design activity is integrated throughout the curriculum. The computer engineering program is accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).

It is our goal that by the time they graduate, B.S. computer engineering students will achieve the following learning outcomes:

- Have the ability to apply knowledge of math, engineering, and science.
- Have the ability to design and conduct experiments on both hardware and software.
- Have the ability to analyze and interpret data.
- Have the ability to design a system, component, or process to meet desired needs, including the planning, specification, detail design, implementation, and evaluation to meet most of the following needs: cost, environmental, performance, safety, and quality requirements.
- Have the ability to function on multi-disciplinary teams.
- Have the ability to identify, formulate, and solve a range of computer engineering problems.
- Have an understanding of professional and ethical responsibility.
- Have the ability to communicate effectively, i.e., to convey technical material through formal written papers/reports which satisfy accepted standards for writing style, and to convey technical material through oral presentation and interation with an audience.
- Have the broad education necessary to understand the impact of engineering solutions in a global and societal context.
- Have a recognition of the need for, and an ability to engage in life-long learning.
- Have knowledge of contemporary issues.
- Have an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice (including computer-based tools, for analysis and design).
- Have knowledge of the breadth and depth across the range of computer engineering topics.
- Have knowledge of mathematics through differential and integral calculus, basic sciences, computer science, and engineering sciences necessary to analyze and design complex electrical and electronic devices, software, and systems containing hardware and software components.
- Have knowledge of probability and statistics.
- Have knowledge of discrete mathematics.

Fundamental courses in the computer engineering areas of hardware and software are taken during the second year with general fundamental engineering courses included. The third and fourth years in the curriculum concentrate on areas of computer engineering in both software and hardware, with technical electives provided to allow the student to acquire more depth in a preferred area of expertise.

The computer engineering technical electives must be taken from 400-level CPE regular courses. The other technical electives should be selected from 400-level regular courses in electrical engineering, computer engineering, or computer science. However, students with special career objectives can petition the department through their advisors for prior written permission to select technical electives from upper-division courses in mathematics, the sciences, or other areas of engineering.

To be eligible for graduation in computer engineering a student must attain a grade point average of 2.0 or better for all required computer engineering, electrical engineering, and computer science courses. If a required CPE, EE, or CS course is repeated, only the hours credited and the grade received for the last completion of the course are used in computing the grade point average. It is important for students to take courses in the order specified as much as possible; all pre- and co-requisites must be observed.

A total of six humanities and social science electives (LSP electives) plus two specified LSP courses must be selected. The humanities and social science electives must be chosen so as to meet the University Liberal Studies Program requirements and Accreditation Board for Engineering and Technology accreditation guidelines.

To complete the B.S. degree program in four years, a student must take approximately 17 credit hours per semester.

A typical B.S. degree program which completes degree requirements in four years with a total of 131 hours is as follows.

Computer Engineering

First Year

Common first year as listed on page 108.

Second Year

First Semester	Hrs.
EE 221 *Intro. to EE Lec.*	3
EE 222 *Intro. to EE Lab*	1
CPE 271 *Int. Dig. Logic Dsgn. Lec*	3
CPE 272 *Digital Logic Lab*	1
MATH 251 *Multivar. Calculus*	4
PHYS 121 *General Physics*	4
Total	**16**

Second Semester	Hrs.
EE 223 *Electrical Circuits Lec.*	3
EE 224 *Electrical Circuits Lab*	1
EE 251 *Digital Elect. Lec.*	3
EE 252 *Digital Elect. Lab*	1
MATH 261 *Elem. Diff. Equat.*	4
ENGL 102 *Comp. and Rhetoric*	3
CS 110 *Intro. to Computer Sci.*	4
Total	**19**

Third Year

First Semester	Hrs.
EE 327 *Signals & Syst.* 1 Lec	3
MATH 375 *Applied Modern Algebra*	3
CPE 310 *Micropr. Sys. Lec*	3
CPE 311 *Microprocessor Lab*	1
EE 355 *Analog Elec. Lab*	1
EE 356 *Analog Elec. Lab.*	1
CS 111 *Intro. Data Structures*	4
Total	**16**

Second Semester	Hrs.
CS 350 *Comp. Sys Concepts*	3
CPE 312 *Mcrcmpt Strc/Intrfcng*	3
CPE 313 *Mcrcmp Strc/Int Lab*	1
STAT 215 *Intro. Prob. & Stat.*	3
CS 330 *Intro. Software Engr.*	3
ECON 201 *Microeconomics*	3
Total	**16**

Fourth Year

First Semester	Hrs.	Second Semester	Hrs.
ECON 202 *Macroeconomics*	3	CPE 481 *Senior Design Project*	3
LSP Elective	3	Engr. Science Elect.	3
Tech. Elective	3	CPE Tech. Elect.	3
CPE 480 *Senior Dsgn Seminar*	2	LSP Electives	6
CS 450 *Oper. Syst. Struct.*	3	**Total**	**15**
Total	**14**	**Grand Total**	**131**

Curriculum in Computer Science

Degrees Offered

Bachelor of Science In Computer Science (College of Engineering and Mineral Resources)

Bachelor of Science In Computer Science (Eberly College of Arts and Sciences)

Computer science is a discipline that involves the understanding and design of computational processes. The discipline ranges from a theoretical study of algorithms and information processing in general, to a practical design of efficient and reliable software that meets given specifications. This differs from most physical sciences, engineering included, that separate theoretical underpinnings of the science from applications within it.

Partly because of the dual nature of computer science, and partly because students need flexibility in choosing a plan that best fits their needs, the department offers two B.S. degree programs: one degree conferred by the College of Engineering and Mineral Resources (CEMR), the other by the Eberly College or Arts and Science (ECAS).

Nature of the Program

The B.S.C.S. option through CEMR introduces students to engineering principles through Engineering 101/199 and required courses in computer engineering. Chemistry and a two-semester sequence in physics is also required, but the student gains flexibility in choosing senior-level computer science (CS) courses, which leaves open the opportunity to explore much of software engineering or other areas. This option is well-suited for freshman engineering students who meet pre-computer science entrance requirements, and for engineering students who want to double major in computer science and computer engineering.

The B.S.C.S. option through ECAS offers flexibility in choosing a liberal education that could include courses, even dual majors, offered in many colleges: Eberly College of Arts and Sciences, Business and Economics, Creative Arts, or any others for which course prerequisites are satisfied. The required two-semester sequence in science can be fulfilled through a variety of science disciplines, but a few requirements on selection of senior level CS courses lean to the theoretical side of the discipline. This option is best suited for students who want a more liberal education with the opportunity to pursue minors or double majors outside of engineering.

From WVU Admission to Completion of B.S.C.S. Degree: CEMR and ECAS

Entering freshman and transfer students face admission standards, pre-degree requirements, and degree requirements before completing their chosen program. Transfer students, especially those already having college credit for mathematics or computer science courses, need to read the section, "Transfer Students."

1. WVU and College Admission

Admission to the pre-computer science program in Lane Department of Computer Science and Electrical Engineering requires prior admission to WVU and to either the ECAS or CEMR, depending on the degree program chosen. CEMR specifically lists additional high school credits and standardized test score requirements beyond WVU admission, while ECAS leaves that judgement to the department. WVU and college requirements can be found in the index of this catalog. Look under:

- Admission, Freshman (for WVU)
- Arts and Sciences (for ECAS)
- Engineering and Mineral Resources (for CEMR)

2. Pre-Computer Science Admission Lane Department of Computer Science and Electrical Engineering.

At this point, all students have satisfied Section 1. Those pursuing a bachelor's degree through CEMR automatically become members of the pre-CS program. Those in the ECAS degree program also become members automatically provided they satisfy any two of the following three requirements:

- 3.0 grade point average in high school.
- Mathematics ACT score of 22, or mathematics SAT score of 500.
- Composite ACT score of 22, or combined SAT score of 1010.

ECAS students who do not meet two of the three requirements are admitted to general studies. They may gain admission to pre-computer science later as transfer students. See "Transfer Students."

3. Pre-Computer Science Requirements

Pre-computer science (pre-CS) consists of core courses required of both CEMR and ECAS degree programs. Typically, students complete pre-CS after their first two years, at which time they become CS degree candidates beginning their junior year. Pre-CS consists of all courses listed below, and each course (or transfer equivalent) must be completed with a grade of C or better. Students may also take CS 300-level courses during this time, but *no student* may take any CS 400-level course until finishing pre-CS.

Courses separated by / are sequence courses:

- CS 110/111/210
- CS 220/221 (was 320)
- CS 230 (was 330)
- CPE 271 and 272 (1 hr. lab)
- Math 155/156 (calculus)

4. Computer Science Degree Program Requirements

Having satisfied all pre-CS requirements, students now become computer science degree candidates (CS). Typically, CS students spend their junior and senior years completing WVU and college course requirements while taking all remaining CS core and elective courses as required of their degree plan. All such courses, listed below, must be finished with a C or better.

ECAS Degree Plan

- STAT 215
- CS 310, CS 350
- Pick one theory course: CS 420, 422, 426, 460, MATH 441
- Pick one systems course: CS 450, 451, 453, 455
- Pick one applications course: CS 410, 430, 440, 470, 472
- Pick two technical electives (6 hrs): CS 400 level, MATH 400 level, CPE 400 level
- CS or CPE 480, CS or CPE 481 (Capstone series)

CEMR Degree Plan

- STAT 215
- CS 310, CS 350
- CPE 310/311
- Pick four technical electives (12 hrs): CS 400-level course or equivalent
- CS or CPE 480, CS or CPE 481 (Capstone series)

5. Suggested Four-Year Plan of Study

Both degree plans (CEMR or ECAS) require 128 hours of coursework. The following shows suggested plans of study for each.

CEMR Degree Plan for B.S.C.S.

First Year

First Semester	Hrs.	Second Semester	Hrs.
CS 110 *Intro. Computer Science*	4	CS 111 *Intro. Data Structures*	4
MATH 155 *Calculus I*	4	MATH 156 *Calculus II*	4
CHEM 115 *Fundamentals Chem*	4	LSP Cluster A/B	3
ENGL 101 *Comp. and Rhetoric*	3	LSP Cluster A/B	3
ENGR 101/199 *FR Engr. Design*	3	LSP Cluster A/B	3
Total	**18**	**Total**	**17**

Second Year

First Semester	Hrs.	Second Semester	Hrs.
CPE 271/272 *Dig Logic Dsgn & Lab*	4	CPE 310/311 *Microprocessor Sys.*	4
PHYS 111 *Gen. Physics*	4	PHYS 112 *Gen. Physics*	4
CS 210 *Adv. Data and File Strct.*	4	ENGL 102 *Comp. and Rhetoric*	3
CS 220 Discrete Mathematics	3	CS 221 *Analysis of Algorithms*	3
LSP Cluster A/B	3	CS 230 *Intro. Software Engr.*	4
Total	**18**	**Total**	**18**

Third Year

First Semester	Hrs.	Second Semester	Hrs.
CS 310 *Prin. Program Language*	3	CS Technical Elective	3
CS 350 *Comp. Sys. Concepts*	3	CS Technical Elective	3
STAT 215 *Intro. Prob. & Stat*	3	Elective**	3
MATH 375 *Appl. Modern Algebra*	3	LSP Cluster A/B	3
LSP Cluster A/B	3	LSP Cluster A/B	3
Total	**15**	**Total**	**15**

Fourth Year

First Semester	Hrs.	Second Semester	Hrs.
CS or CPE 480 *Sr. Design Seminar*	2	CS or CPE 481 *Sr. Design Project*	3
CS Technical Elective	3	CS Technical Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
LSP Cluster A/B	3	Elective	1-3
Total	**14**	**Total**	**13-15**
		Grand Total	**128-130***

*128 hours are required.
**The six electives need only to total 16 hours, not 18.

ECAS Degree Plan for B.S.C.S.

First Year

First Semester	Hrs.	Second Semester	Hrs.
CS 110 *Intro. Computer Science*	4	CS 111 *Intro. Data Structures*	4
MATH 155 *Calculus I*	4	MATH 156 *Calculus II*	4
UNIV 101	1	ENGL 101 *Comp. and Rhetoric*	3
LSP Cluster A/B	3	LSP Cluster A/B	3
LSP Cluster A/B	3	LSP Cluster A/B	3
Total	**15**	**Total**	**17**

Second Year

First Semester	Hrs.
CS 210 *Data and File Structure*	4
CS 220 *Discreet Mathematics*	3
ENGL 102 *Comp. and Rhetoric*	3
Lab Science	4
LSP Cluster A/B	3
Total	**17**

Second Semester	Hrs.
CPE 271/272 *Dig Logic Dsgn & Lab*	4
CS 221 Analysis *of Algorithms*	3
CS 230 *Intro. Software Engr.*	4
Lab Science	4
LSP Cluster A/B	3
Total	**18**

Third Year

First Semester	Hrs.
CS 310 *Prin. Program Language*	3
CS 350 *Comp. Sys. Concepts*	3
STAT 215 *Intro. Prob. & Stat*	3
CS Technical Elective	3
LSP Cluster A/B	3
Total	**15**

Second Semester	Hrs.
CS Technical Elective	3
CS Technical Elective	3
Elective**	3
Elective	3
LSP Cluster A/B	3
Total	**15**

Fourth Year

First Semester	Hrs.
CS or CPE 480 *Sr. Design Seminar*	2
CS Technical Elective	3
CS Technical Elective	3
Elective	3
Elective	3
Elective	3
Total	**17**

Second Semester	Hrs.
CS or CPE 481 *Sr. Design Project*	3
Elective	3
Elective	3
Elective	3
Elective	3
Total	**15**

Grand Total 129*

*128 hours are required.
**The nine electives need only to total 26 hours, not 27.

Transfer Students

Students wishing to transfer into pre-computer science or computer science must satisfy admission requirements and must petition the Lane Department of Computer Science and Electrical Engineering for admission. If petitioning:

- In person, come to the department's office and ask for the undergraduate advisor. Bring a transcript of all college-level coursework attempted.
- By mail, be sure to include a transcript of all college-level coursework attempted and an indication of when the transfer is desired. On the envelope in the lower-left corner, write "Transfer petition for UG CS." Mail to Lane Department of Computer Science and Electrical Engineering, WVU, P.O. Box 6109, Morgantown, WV 26506-6109.

Transfer students are expected to meet the following requirements:

- A grade-point average of at least 3.0 in all college-level work attempted.
- A grade of C or better in any transfer course that will count as pre-CS or CS.

The number of transfer students accepted into the department is governed by the enrollment capacities of the degree programs. First admission priority is given to those students currently matriculated at WVU; second priority, to students enrolled in computer science curricula at external colleges and universities; third priority, to students enrolled in other degree programs at external colleges and universities. Within the last two priorities, preferential admission is in the following order: West Virginia residents, U.S. citizens or permanent residents, and international students.

Minor in Computer Science

Any student may take a minor in computer science by taking the following courses and making a C or better. The symbol "/" means sequence courses:

- CS 110 / 111.
- Pick one from: CS 210, CS 220, CS 350.
- Pick two from: CS 221 (old CS 330; pre-requisite is 220), 310, 320, 330.
- At least one CS 400-level course.

Curriculum in Electrical Engineering

Degree Offered

Bachelor of Science In Electrical Engineering

Electrical engineers design, develop, test, and oversee the manufacture and maintenance of equipment that uses electricity. Electrical equipment includes power generating and transmission equipment, motors, machinery controls, instrumentation in cars and aircraft, robots, computers, communications equipment, and health-care equipment.

The objective of the bachelor's degree program in electrical engineering (EE) is to produce graduates who have the knowledge, skills, and attitude that will ensure success in professional positions in business, industry, research, government service, or graduate study as well as professional schools.

We carry out this mission by providing our students with a sound education in mathematics and the sciences, a broad foundation in the fundamentals of engineering, elective opportunities to develop expertise in one or more emphasis areas, and the general education necessary to put technical knowledge into perspective. Theoretical work is complemented by an emphasis on the practice of engineering, and design activity is integrated throughout the curriculum. The electrical engineering program is accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).

We expect that all students in the B.S.E.E. program at WVU will have achieved the following outcomes by the time they graduate:

- An ability to apply knowledge of mathematics, science, and engineering.
- An ability to design and conduct engineering and scientific experiments.
- An ability to analyze and interpret engineering and scientific data.
- An ability to design, including the planning, specification, detail design, implementation, and evaluation of components, processes, or systems to meet performance, cost, safety, and quality requirements.
- An ability to function on multi-disciplinary teams.
- An ability to identify, formulate, and solve a range of electrical engineering problems.
- An understanding of professional and ethical responsibility.
- An ability to convey technical material through formal written papers/reports which satisfy accepted standards for writing style.
- An ability to convey technical material through oral presentation and interaction with an audience.
- Knowledge of the wisdom represented by the humanities and fine arts.
- A recognition of the need for, and an ability to engage in, life-long learning.
- Knowledge of contemporary social issues necessary to understand the impact of electrical/computer engineering solutions in a global and societal context.
- An ability to use modern engineering techniques and tools, including computer-based tools, for analysis and design.
- Knowledge of electrical engineering fundamental concepts, with advanced knowledge in at least one subdiscipline of electrical engineering.
- Knowledge of mathematics through differential and integral calculus, basic sciences, and engineering sciences necessary to design complex electrical and electronic devices and systems containing hardware and software components.
- Knowledge of probability and statistics, including electrical engineering applications.
- Knowledge of differential equations and other advanced mathematics such as linear algebra, complex variables, or discrete mathematics.

In the first two years of electrical engineering, coursework is limited to those subjects which are essential as preparatory courses for more technical courses in the third and fourth years. Fundamental courses in electrical engineering are introduced in the second year. In the third and fourth years, the curriculum provides advanced instruction through required courses and electives. These electives are included in the curriculum to allow the student to acquire additional depth in the student's selected field of electrical engineering.

Five technical electives are required for a total of 15 credits. At least three must come from one of the EE Emphasis areas. Two additional technical electives may be selected from upper-division engineering, science, or math areas. However, a student with special career objectives may petition the Lane Department through his/her advisor for prior written permission to select one upper division course meeting those objectives.

The mathematics science elective and engineering science elective are selected from department-approved lists. Students should consult with their advisors to select a course from this list. To be eligible for graduation in electrical engineering a student must attain a grade point average of 2.0 or better for all required electrical engineering courses. If a required EE course is repeated, only the hours credited and the grade received for the last completion of the course is used in computing the grade point average. It is important for students to take courses in the order specified as much as possible; all pre- and co-requisites must be observed.

A total of six humanities and social science electives (LSP electives) must be selected. The humanities and social science electives must be chosen so as to meet University Liberal Studies Program requirements and Accreditation Board for Engineering and Technology accreditation guidelines. To complete the B.S. degree program in four years, a student must take approximately 17 credit hours per semester.

A typical B.S. degree program which completes degree requirements in four years or a total of 131 hours is as follows.

Electrical Engineering

First Year

Common first year as listed on page 108.

Second Year

First Semester	Hrs.	Second Semester	Hrs.
EE 221 *Intro. to EE Lec.*	3	EE 223 *Electrical Circuits Lec.*	3
EE 222 *Intro. to EE Lab*	1	EE 224 *Electrical Circuits Lab*	1
CPE 271 *Intro. Dig. Log. Dsgn*	3	MATH 261 *Elem. Diff. Equations*	4
CPE 272 *Dig. Log. Lab*	1	Math/Science Elective	3
MATH 251 *Multivar. Calculus*	4	ENGL 102 *Comp. and Rhetoric*	3
PHYS 112 *General Physics*	4	EE 251 *Digital Elect.*	3
Total	**16**	EE 252 *Digital Elect. Lab*	1
		Total	**18**

Third Year

First Semester	Hrs.	Second Semester	Hrs.
EE 335 *Elec. Enrgy Conv. & Sys.*	3	EE 329 *Signals and Systems 2*	3
EE 336 *Elec. Enrgy Conv. Lab*	1	EE 328 *Signals and Systems Lab*	1
EE 345 *Engr. Electromagnetics*	3	CPE 310 *Microprosessors Sys.*	3
EE 327 *Signals & Systems 1*	3	CPE 311 *Microprosessors Lab*	1
EE 355 *Analog Elec.*	3	Engr. Science Elective	3
EE *Analog Elec. Lab*	1	ECON 201 *Microeconomics*	3
STAT 215 *Intro. Prob. & Stat*	3	Technical Elective	3
Total	**17**	**Total**	**17**

Fourth Year

First Semester	Hrs.	Second Semester	Hrs.
ECON 202 *Macroeconomics*	3	EE 481 *Senior Design Project*	3
Technical Elective	3	LSP Elective*	3
Technical Elective	3	LSP Elective*	3
LSP Elective*	3	Technical Elective	3
EE 480 *Senior Design Sem*	2	Technical Elective	3
Total	**14**	**Total**	**15**
		Grand Total	**132**

Note: LSP elective courses must consist of 12 hours in Cluster A and six hours in Cluster B. The courses must be chosen in accordance with University Liberal Studies Program distribution guidelines.

Dual Degree Curriculum

Students can simultaneously pursue B.S. degrees in two majors within the department by completing a small number of additional classes. The student must satisfactorily complete at least 158 credits and meet all the requirements for both degrees. A suggested schedule for the dual curriculum in electrical engineering and computer engineering is shown below.

Electrical/Computer Engineering (Dual Major)

First Year

Common first year as listed on page 108.

Second Year

First Semester	Hrs.	Second Semester	Hrs.
EE 221 *Intro. to EE Lec.*	3	EE 223 *Electrical Circuits Lec.*	3
EE 222 *Intro. to EE Lab*	1	EE 224 *Electrical Circuits Lab*	1
PHYS 112 *General Physics*	4	ENGL 102 *Comp. and Rhetoric*	3
CPE 271 *Intro. Dig. Log Dsgn*	3	EE 252 *Digital Elect. Lab*	1
CPE 272 *Dig. Log Lab*	1	EE 251 *Digital Elect.* *	3
MATH 251 *Multivar. Calculus*	4	MATH 261 *Elem. Diff. Equations*	4
Free Elective***	3	CS 110 *Intro. Computer Science*	4
Total	**19**	**Total**	**19**

Third Year

First Semester	Hrs.	Second Semester	Hrs.
EE 327 *Signals & Systems 1*	3	CPE 312 *Micro. Struc. & Interface*	3
CPE 310 *Microprocessor Sys.*	3	CPE 313 *Micro. Struc. & Inter. Lab*	1
CPE 311 *Microprocessor Lab*	1	CS 350 *Computer Sys. Concepts*	3
MATH 375 *Applied Modern Algebra*	3	CS 330 *Intro. Software Engr.*	3
STAT 215 *Intro. Prob. & Stat.*	3	EE 329 *Signals & Systems II**	3
CS 111 *Intro. Data Structures*	4	EE 328 *Signals & Systems Lab**	1
Total	**17**	ECON 201 *Microeconomics*	3
		Total	**17**

Fourth Year

First Semester	Hrs.	Second Semester	Hrs.
EE 355 *Analog Elect. Lec.**	3	CPE 480 *Senior Design Seminar*	2
EE 356 *Analog Elect. Lab**	1	Technical Elective*	3
EE 335 *Elect. Enrgy Conv. & Sys.**	3	Engr. Science Elective	3
EE 336 *Elec. Enrgy Conv. Lab**	1	LSP Elective	3
EE 345 *Engr. Electomagnetics**	3	ECON 202 *Macroeconomics*	3
CS 450 *Operating Sys. Structures*	3	Technical Elective	3
CPE Technical Elective	3	**Total**	**17**
Total	**17**		

Fifth Year

First Semester	Hrs.
CPE 481 *Senior Design Project*	3
LSP Elective	3
LSP Elective	3
Technical Elective**	3
Technical Elective**	3
Free Elective***	3
Total	**18**
Grand Total	**159**

*Only taught once per year, in the semester shown.

** Students who plan to apply for the B.S. in computer engineering may wish to schedule CS 110 and CS 111 in the *first* year and move the Cluster A or B electives to the later years.

*** Six hours of any University scheduled course(s).

Technical Electives

Five technical electives are required. At least three must come from one of the electrical engineering emphasis areas other than computers. One additional technical elective must be a 400-level computer engineering course, and one technical elective may be selected from upper-division engineering, science, or math areas. However, a student with special career objectives can petition the department through his or her advisor for prior written permission to select one upper-division course meeting his or her career objectives.

Department of Industrial and Management Systems Engineering

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Degree Offered

Bachelor of Science in Industrial Engineering

Curriculum in Industrial Engineering

Industrial engineering is the discipline of engineering concerned with the design, improvement, and installation of integrated systems of people, material, information, equipment, and energy to assure performance, reliability, maintainability, schedule adherence, and cost control. Industrial engineers look at the "big picture" of an operation or system and bridge the gap between management and operations. They deal with and motivate people as well as determine what tools should be used and how they should be used. Industrial engineers use computers and sophisticated software as tools to solve complicated problems to design, quantify, predict, and evaluate the performance of all types of complex technologies and systems.

The mission of the industrial engineering program at WVU is to advance the industrial engineering profession through innovative and high-quality academic programs, relevant research, and professional services that address the needs of West Virginia, the nation, and the world. The industrial and management system engineers at WVU are taught to draw upon specialized knowledge and skills in the mathematical, physical, and social sciences, together with the principles and methods of engineering analysis and design to specify, predict, and evaluate the results to be obtained from such systems. They are introduced to state-of-the-art software in their coursework for data analysis, information management, scheduling, quality control, optimization, and other practices and procedures used by the industrial engineering profession in highly evolving industries of the early 21st century.

The discipline of industrial engineering has a rich, ever-increasing diversity of applications. Traditionally, industrial engineers have been employed by manufacturing companies to do facilities and plant design, plant management, quality control, ergonomics, and production engineering. Today, however, industrial engineers are employed in almost any type of industry, business, or institution. Because of their skills, industrial engineers are more widely distributed and in greater demand among more industries than any other engineering discipline.

As an industrial engineer educated at WVU you can expect to have employment opportunities in manufacturing companies, insurance companies, banks, hospitals, technical sales, pharmaceutical companies, retail organizations including e-business, airlines, government agencies, consulting firms, construction, transportation, public utilities, social service, electronics, digital and wireless communications, etc. The diverse orientation of industrial engineering coupled with the skills and training you receive at WVU make you a prime source of management talent that offers unique professional advancement opportunities.

The industrial engineering program at WVU devotes considerable attention to the individual needs of the student. It is committed to develop student strengths in technical abilities, personal development, problem solving, and practical experience preparing them for careers in industry, business, government, or advanced professional degrees. One of the defining attributes in the success of the department is the dedication and talent of its faculty

and staff. The aggregate careers of our faculty and staff represent nearly 300 years of service to students at WVU. In these 300 years of service are embodied the wisdom and experience to successfully prepare industrial engineers for the 21st century.

The faculty works extensively with our 110 to 120 sophomore, junior, and senior students in such areas as communication skills, personal growth and development, creation of summer internship opportunities, senior capstone project experience, and permanent job opportunities. As faculty and staff we are committed to provide for our students:

- A friendly, open-door collegial environment.
- Personable faculty mentoring students.
- Teaching concepts and techniques for today's demands.
- Quality courses that are innovative and challenging.
- Placement in the jobs they want.
- Notable life-long successes.

As a graduate of the industrial engineering baccalaureate program at WVU, you will be prepared to:

- Practice industrial engineering and initiate and develop leadership roles in business, industry, and/or government.
- Continue professional development and life-long learning and contribute to the advancement of the industrial engineering profession.
- Interact in society and business in a professional, ethical manner and embrace diversity.
- Be proficient in written and oral communication and utilize people-oriented skills in individual and team environments.
- Apply the skills from industrial engineering to be proficient in your chosen field or graduate studies.

To be eligible for graduation with a bachelor of science in industrial engineering a student must attain a grade point average of 2.0 or better for all industrial and management systems engineering courses attempted. If a course is repeated, only the last grade received is counted in computing the grade point average, and the course credit hours are counted only once. This requirement assures that the student has demonstrated overall competence in the chosen major.

To complete the B.S. degree program in four years, a student must take approximately 17 credit hours per semester. A typical B.S. degree program that completes degree requirements in four years is as follows.

Industrial and Management Systems Engineering

First Year

Common first year as listed on page 108.

Second Year

First Semester	Hrs.	Second Semester	Hrs.
MATH 251 *Multivar. Calculus*	4	MATH 261 *Elem. Diff. Equat.*	4
CHEM 116 or PHYS 112	4	MAE 243 *Mech. of Materials*	3
MAE 241 *Statics*	3	IMSE 213 *Engineering Statistics*	3
ENGL 102 *Comp. & Rhetoric*	3	IMSE 377 *Engineering Economy*	3
IMSE 200 *Fundamentals of I E*	1	Cluster A or B Elective	3
IMSE 220 *Re-Engineering*	3	**Total**	**16**
Total	**18**		

Third Year

First Semester	Hrs.	Second Semester	Hrs.
ECON 201 *Microeconomics*	3	ECON 202 *Macroeconomics*	3
IMSE 304 *Materials and Costing*	3	IMSE 302 *Mfg. Processes*	2
IMSE 314 *Adv. Analy. of Eng. Data*	3	IMSE 303 *Mfg. Processes Lab*	1
IMSE 350 *Intro. Oper. Research*	3	IMSE 316 *Ind. Quality Cont.*	3
IMSE 360 *Human Factors Engr.*	3	IMSE 331 *Computer Appl. IE*	3
Total	**15**	IMSE 343 *Prod. Plan and Design*	3
		Total	**15**

Fourth Year

First Semester	Hrs.
EE 306 *Basic Electric Eng.*	3
EE 307 *Basic Electric Lab*	1
IMSE Tech. Elective	3
IMSE 455 *Simula. by Digital Meth.*	3
IMSE 471 *Design Productive Sys.*	3
Cluster A or B	3
Total	**16**

Second Semester	Hrs.
IMSE 472 *Design Prod. Systems*	3
IMSE Tech. Elective.	3
Cluster A or B	3
Select 2 of the following courses	6
IMSE Tech. Elective	
MAE 242 *Dynamics*	
MAE 320 *Thermodynamics*	
MAE 331 *Fluid Mechanics*	
Total	**15**
Grand Total	**129**

Department of Mechanical and Aerospace Engineering

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Degrees Offered

Bachelor of Science in Mechanical Engineering
Bachelor of Science in Aerospace Engineering

Curriculum in Aerospace Engineering

Aerospace travel, space exploration, and flight of manned or unmanned vehicles continue to gain significance. Aerospace engineering is involved with the science and technology of advanced vehicles, including aircraft, rockets, missiles, and spacecraft. Although a specialized branch of engineering, it is also diverse. Aerospace technology has expanded to include design and development of new earthbound vehicles such as ground-effect machines, hydrofoil ships, and high-speed rail-type systems.

Objectives

The Department of Mechanical and Aerospace Engineering is highly committed to provide a foundation in aerospace engineering so that graduates will meet the following objectives:

1. Graduates will be proficient in aerospace engineering.
2. Graduates will be prepared to meet the varying demands of the workforce in the technological arena.
3. Graduates will be prepared for the pursuit of lifelong learning.

The curriculum consists of a judicious combination of fundamentals, including mathematics and sciences, and practical laboratory experience which provides modern engineering tools. Aeronautical engineering subjects are to be the focus of the discipline along with significant exposure to space-related topics. The graduate will be able to critically analyze aerospace engineering problems and execute practical solutions. In addition to being able to function independently, it is expected that the graduate will be able to function with effective written and oral communication within a multidisciplinary team and be equipped with several factors such as environmental, social, and economic considerations due to a thorough education in the humanities, social sciences, ethics, safety, and professionalism.

The aerospace engineering curriculum includes studies in the disciplines encountered in the design of aerospace vehicles, missiles, rockets, and spacecraft. Undergraduate students extensively study the basic principles of fluid dynamics, solid mechanics and structures, stability and control, and thermal sciences and propulsion. The senior year includes a capstone flight vehicle design course.

The student is involved in both theoretical and experimental studies, and trained to integrate knowledge with practical engineering design. With the breadth and depth of education in aerospace engineering, the student becomes a versatile engineer, competent to work in many areas. The curriculum may serve as a terminal program by incorporating design-oriented courses for technical electives, or it may be used as a preparatory program for advanced study by the selection of science-oriented courses.

While the undergraduate curriculum is sufficiently broad to permit the graduate to select from a wide variety of employment opportunities, it contains sufficient depth to prepare a student to enter a graduate school to pursue an advanced degree. As modern science and engineering become more complex, the desirability of graduate-level preparation is being recognized by most advanced industries and government agencies.

Students can simultaneously pursue B.S. degrees in both aerospace engineering and mechanical engineering by completing additional courses. Information on this 158 credit-hour, four-and-one-half-year option can be seen at the end of this department description.

Students who plan a career in medicine, dentistry, or related areas, but who desire an aerospace engineering degree before entering the appropriate professional school, may substitute eight hours (from a combination of biology and organic chemistry courses) for the required six hours of technical electives. This selection will help the student satisfy admission requirements to the professional schools in the health sciences.

The aerospace engineering program at WVU is administered by the faculty of the Department of Mechanical and Aerospace Engineering.

Minimum Grade Point Average Requirement for Graduation (B.S.A.E.)

A requirement for graduation in aerospace engineering is a departmental grade point average of at least 2.0 in all required mechanical and aerospace engineering departmental courses. If a required MAE course is repeated, only the hours credited and the grade received for the last completion of the course will be counted in computing the student's departmental grade point average.

It is important for students to take courses in the order specified as much as possible; all prerequisites and concurrent requirements must be observed. To complete the B.S.A.E. degree program in four years, a student must take approximately 16 credit hours per semester. A typical B.S.A.E. degree program which completes degree requirements in four years is as follows.

Aerospace Engineering

First Year

Common first year as listed on page 108.

Second Year

First Semester	Hrs.	Second Semester	Hrs.
MAE 215 Intro. to Aerospace Engr.	3	MAE 242 *Dynamics*	3
MAE 241 *Statics*	3	MAE 243 *Mechanics of Materials*	3
MATH 251 *Multivar. Calculus*	4	MAE 244 *Dynam. and Strength Lab*	1
PHYS 112 *General Physics*	4	MATH 261 *Elem. Diffl. Equations*	4
ENGL 102 *Comp. and Rhetoric*	3	Cluster A or B elective	3
Total	**17**	**Total**	**14**

Third Year

First Semester	Hrs.	Second Semester	Hrs.
MAE 320 *Thermodynamics*	3	MAE 316 *Analy. of Engr. Sys.*	3
MAE 335 *Incompressible Aerodyn.*	3	MAE 336 *Compress. Aerodyna.*	3
MAE 343 *Intermed. Mech. of Matls.*	3	MAE 345 *Aerospace Structures*	3
EE 306 *Basic Electrical Engr.*	3	MAE 365 *Flight Dynamics*	3
EE 307 *Basic Electrical Lab*	1	Cluster A or B Elective	3
Cluster A or B Elective	3	**Total**	**15**
Total	**16**		

Fourth Year

First Semester	Hrs.	Second Semester	Hrs.
MAE 426 *Flight Vhcl Propulsion*	3	MAE 423 *Heat Transfer*	3
MAE 434 *Experimental Aerodyn*	2	MAE 460 *Automatic Controls*	3
MAE 456 *CAD/Finite Elem. Anal.*	3	MAE 476 *Space Flight and Sys.*	3
MAE 475 *Flight Vehicle Design*	3	Technical Elective	3
Technical Elective	3	Cluster A or B Elective	3
Cluster A or B Elective	3	**Total**	**15**
Total	**17**	**Grand Total**	**129**

Note: The six hours of technical electives must be selected from a list of approved aerospace engineering technical electives after consulting with the advisor; the courses selected should form a clear and consistent pattern according to the career objectives of the student. The 12 hours of Cluster A and 12 hours of Cluster B courses must be selected to meet the University and college LSP requirements.

Curriculum in Mechanical Engineering

Mechanical engineering is a broad technical discipline. It integrates knowledge of the physical sciences and mathematics for the design, construction, and manufacture, testing, analysis, use, and operation of a device, structure, a machine, a process, or a system in service to mankind. Its development parallels the growth of industry. Modern society needs mechanical engineers who have broad and deep training in the fundamentals of engineering and related sciences, and have developed a versatility in analyzing and solving complex problems. The mechanical engineer must not only possess a high level of professional expertise but also have an appreciation for vital human and economic considerations.

Mechanical engineers are problem-solvers who are scientifically informed and mathematically minded. The mechanical engineering curriculum prepares students to deal effectively with a broad range of engineering problems rather than with narrow specialties. Graduates find employment in a wide range of industries, government agencies, and educational institutions where they are concerned with many functions: the use and economic conversion of energy from natural sources into useful energy for power, light, heating, cooling, and transportation; the design and production of machines to lighten the burden of human work; the planning and development of systems for using energy machines and resources; the processing of materials into products useful to mankind; and the education and training of specialists who deal with mechanical systems.

Objectives

The Department of Mechanical and Aerospace Engineering is highly committed to provide a foundation in mechanical engineering so that graduates will meet the following objectives.

1. Graduates will be proficient in mechanical engineering.
2. Graduates will be prepared to meet the varying demands of the workforce in the technological arena.
3. Graduates will be prepared for the pursuit of lifelong learning.

The curriculum consists of a judicious combination of fundamentals, including mathematics and sciences, and practical laboratory experience which provides modern engineering tools. Mechatronics, which is a study of the interdependence between mechanical engineering and electrical/electronics engineering, is a key part of the mechanical engineering curriculum. The graduate will be able to critically analyze mechanical engineering problems and execute practical solutions. In addition to being able to function independently, it is expected that the graduate will be able to function with effective written and oral communication within a multidisciplinary team and be equipped with several factors such as environmental, social, and economic considerations due to a thorough education in the humanities, social sciences, ethics, safety, and professionalism.

While the undergraduate curriculum is sufficiently broad to permit the graduate to select from a wide variety of employment opportunities, it contains sufficient depth to prepare a student to enter a graduate school to pursue an advanced degree. As modern science and engineering become more complex, the desirability of graduate-level preparation is being recognized by most advanced industries and government agencies.

Students can simultaneously pursue B.S. degrees in both aerospace engineering and mechanical engineering by completing additional courses. Information on this 158 credit-hour, four-and-one-half-year option can be seen at the end of this section.

Students who plan a career in medicine, dentistry, or related areas, but who desire a mechanical engineering degree before entering the appropriate professional school, may substitute eight hours (from a combination of biology and organic chemistry courses) for the required six hours of technical electives. This selection will help the student satisfy admission requirements to the professional schools in the health sciences.

The mechanical engineering program at WVU is administered by the faculty of the Department of Mechanical and Aerospace Engineering.

Minimum Grade Point Average Requirement for Graduation (B.S.M.E.)

A requirement for graduation in mechanical engineering is a departmental grade point average of 2.0 or better for all required mechanical and aerospace engineering (MAE) courses. If a required MAE course is repeated, only the hours credited and the grade received for the last completion of the course is used in computing the grade point average.

It is important for students to take courses in the order specified as much as possible; all prerequisites and concurrent requirements must be observed. To complete the B.S.M.E. degree program in four years, a student must take approximately 16 credit hours per semester. A typical B.S.M.E. degree program which completes degree requirements in four years is as follows.

Mechanical Engineering

First Year

Common first year as listed on page 108.

Second Year

First Semester	Hrs.	Second Semester	Hrs.
MAE 211 *Mechatronics* or Cluster	3	MAE 242 *Dynamics*	3
MAE 241 *Statics*	3	MAE 243 *Mech. of Materials*	3
MATH 251 *Multivar. Calculus*	4	MAE 244 *Dynam. and Strength Lab*	1
PHYS 112 *General Physics*	4	MATH 261 *Elem. Diffl. Equations*	4
ENGL 102 *Comp. and Rhetoric*	3	Cluster or MAE 211	3
Total	**17**	**Total**	**14**

Third Year

First Semester	Hrs.	Second Semester	Hrs.
MAE 320 *Thermodynamics*	3	MAE 316 *Analy. of Engineering Sys.*	3
MAE 331 *Fluid Mechanics*	3	MAE 321 *Applied Thermodynamics*	3
MAE 343 *Intermed. Mech. of Matls.*	3	MAE 322 *Thermal and Fluids Lab*	1
EE 306 *Basic Electrical Engr.*	3	MAE 342 *Dynamics of Machines*	3
EE 307 *Basic Electrical Lab*	1	IMSE 302 *Manufacturing Process*	2
Cluster A or B Elective	3	IMSE 303 *Manf. Process Lab*	1
Total	**16**	Cluster A or B Elective	3
		Total	**16**

Fourth Year

First Semester	Hrs.
MAE 454 *Machine Design & Mfg.*	3
MAE 456 *CAD/Finite Elem. Ana or* MAE 423 *Heat Transfer*	3
MAE 471 *Prin. of Engr. Design*	3
Technical Elective	3
Cluster A or B Elective	3
Total	**15**

Second Semester	Hrs.
MAE 411 *Advanced Mechatronics*	3
MAE 423 *Heat Transfer or* MAE 456 *CAD/Finite Elem. Anal.*	3
MAE 460 *Automatic Controls*	3
Technical Elective	3
Cluster A or B Elective	3
Total	**15**
Grand Total	**128**

Note: The six hours of technical electives must be selected from a list of approved mechanical engineering technical electives after consulting with the advisor; the courses selected should form a clear and consistent pattern according to the career objectives of the student. The 12 hours of Cluster A and 12 hours of Cluster B courses must be selected to meet the University and college LSP requirements.

Dual Major in Aerospace Engineering and Mechanical Engineering

In the modern technical marketplace, college graduates must attain every competitive edge possible to enhance their career opportunities. One way to do this is with a master's degree following the bachelor's degree; however, this often results in more specialization than may be desired, and may take an additional two years. Another option is to broaden the undergraduate experience, thus opening more opportunities for the graduate. The dual B.S.A.E./B.S.M.E. program awards both the aerospace engineering and mechanical engineering degrees at the completion of a planned curriculum.

Students under this option pursue the B.S.A.E. and B.S.M.E. degrees simultaneously. This can be accomplished by declaring intentions as a freshman requesting admission to the programs, or by informing an MAE advisor of the dual-degree preference. Maximum scheduling flexibility will result when this decision is made as early as possible in the student's academic career. Dual-degree students must take all courses listed in the 158-hour dual curriculum below and satisfy the other requirements of the two individual programs.

The state of West Virginia is a member of a group of Academic Common Market (ACM) states. WVU allows residents of states within the ACM to enroll in the dual B.S.A.E./B.S.M.E. program on an in-state tuition basis. Application must be made through the higher education authority of the state of residence.

Dual Curriculum

First Year

Common first year as listed on page 108.

Second Year

First Semester	Hrs.
MAE 215 *Intro. Aerospace Engr.*	3
MAE 241 *Statics*	3
MATH 251 *Multivar. Calculus*	4
PHYS 112 *General Physics*	4
ENGL 102 *Comp. and Rhetoric*	3
Total	**17**

Second Semester	Hrs.
MAE 211 *Mechatronics*	3
MATH 242 *Dynamics*	3
MAE 243 *Mech. of Materials*	3
MAE 331 *Fluid Mechanics*	4
MATH 261 *Elem. Diffl. Equations*	3
Cluster A or B Elective	3
Total	**19**

Third Year

First Semester	Hrs.
MAE 244 *Dynam. & Strength Lab*	1
MAE 320 *Thermodynamics*	3
MAE 335 *Incompressible Aerodyn.*	3
MAE 343 *Intermed. Mech of Matls.*	3
EE 306 *Basic Electrical Engr.*	3
EE 307 *Basic Electrical Lab.*	1
Cluster A or B Elective	3
Total	**17**

Second Semester	Hrs.
MAE 316 *Analy. of Eng. Sys.*	3
MAE 336 *Compressible Aero.*	3
MAE 342 *Dynamics of Machines*	3
MAE 345 *Aerospace Structures*	3
MAE 365 *Flight Dynamics*	3
Cluster A or B Elective	3
Total	**18**

Fourth Year

First Semester	Hrs.
MAE 322 *Thermal & Fluids Lab*	1
MAE 426 *Flight vehicle Propulsion*	3
MAE 434 *Experimental Aerodyn*	2
MAE 456 *CAD/Finite Elem Anal.*	3
MAE 475 *Flight Vehicle Design*	3
Technical Elective	3
Technical Elective	3
Total	**18**

Second Semester	Hrs.
MAE 411 *Advanced Mechatronics*	3
MAE 423 *Heat Transfer*	3
MAE 460 *Automatic Controls*	3
MAE 476 *Space Flight and Sys.*	3
IMSE 302 *Mfg. Process.*	2
IMSE 303 *Mfg. Process Lab*	1
Technical Elective	3
Total	**18**

Fifth Year

First Semester	Hrs.
MAE 454 *Machine Design & Mfg.*	3
MAE 471 *Prin. of Engr. Design*	3
Technical Elective	3
Technical Elective	2
Cluster A or B Elective	3
Cluster A or B Elective	3
Total	**17**
Grand Total	**159**

Note: Six hours of technical electives must be selected from a list of approved aerospace engineering technical electives and other six hours from a list of approved mechanical engineering technical electives after consulting with the advisor; the courses selected should form a clear and consistent pattern according to the career objectives of the student. The 12 hours of Cluster A and 12 hours of Cluster B courses must be selected to meet the University and college LSP requirements.

Department of Mining Engineering

Syd S. Peng, Ph.D., Chair
365-A Mineral and Energy Resources Building
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Degree Offered

Bachelor of Science in Mining Engineering

Curriculum in Mining Engineering

Mining engineering deals with discovering, extracting, beneficiating, marketing, and utilizing mineral deposits from the earth's crust. The role of the mining engineer may be quite diversified, and the field offers opportunities for specialization in a large number of technical areas. The trained professional in this field is well versed in mining and geology and also in the principles of civil, electrical, and mechanical engineering as applied to the mining industry. With the present trend toward the use of engineers in industrial management and administrative positions, the mining engineer's training also includes economics, business, personnel management, and the humanities.

The educational objective of the B.S.Min.E. program have been established to produce graduates who are thoroughly prepared to meet the operational and engineering challenges of the mining industry and to continue their studies in graduate programs. Graduates will meet the following objectives:

1. Graduates are well prepared in application of mathematics, science, and engineering.
2. Graduates are well prepared to design and conduct experiments, as well as to analyze and interpret data.
3. Graduates are well prepared to design a system, component, or process to meet desired needs.
4. Graduates have an ability to function on multidisciplinary teams.
5. Graduates have an ability to identify, formulate, and solve engineering problems.
6. Graduates have an understanding of professional and ethical responsibility.
7. Graduates have an ability to communicate effectively.

8. Graduates have the broad education necessary to understand the impact of engineering solutions in a global and societal context.
9. Graduates have a recognition of the need for, and an ability to engage in life-long learning.
10. Graduates have a knowledge of contemporary issues.
11. Graduates have an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
12. Graduates have an understanding of the importance of economics, environmental, health and safety issues in the operations of modern mines.
13. Graduates have an ability to learn independently.

Professional technical courses include surface and underground mining systems. Engineering principles of blasting, materials handling, ventilation, roof control, rock mechanics, mining equipment, coal and mineral preparation, plant and mine design, geology, and water control. In addition, students receive a foundation in the managerial, financial, environmental, and social aspects of the operation of a mining enterprise.

In the fourth year, the student may specialize in such career areas as coal mining, ore mining, or other phases of mining engineering through the proper selection of design problems and electives. The student will be assigned an advisor who will assist in this phase of the program.

Local coal fields, mines, and preparation plants provide extensive opportunity for research, instruction, and field work in a real-world situation.

Mining Engineering (B.S.M.E.)

First Year

Common first year as listed on page 108.

Second Year

First Semester	Hrs.	Second Semester	Hrs.
MINE 205 *Ug. Mining Systems*	3	MINE 206 *Surf. Mining Systems*	4
MINE 201 *Mine Surveying.*	3	MAE 242 *Dynamics*	3
MINE 261 *Engineering CAD*	1	MATH 261 *Elem. Diff. Equat.*	4
MAE 241 *Statics*	3	PHYS 112 *General Physics*	4
GEOL 342 *Struct. Geol. for Engr.*	3	STAT 211 *Elem. Stat. Inference*	3
MATH 251 *Multivar. Calculus*	4	**Total**	**18**
Total	**17**		

Third year

First semester	Hrs.	Second semester	Hrs.
MINE 306 *Mining Expl. and Eval*	3	MINE 331 *Mine Envirn. Engr.*	3
MINE 381 *App. Min. Comp. Meth.*	3	MINE 427 *Coal Preparation*	4
EE 306 *Basic Elect. Engr.*	3	MINE 471 *Mine and Safety Mgmt.*	3
MAE 331 *Fluid Mechanics*	3	MAE 243 *Mech. of Materials*	3
Cluster A or B Elective	3	Cluster A or B Elective	3
Total	**15**	**Total**	**16**

Fourth year

First semester	Hrs.	Second semester	Hrs.
MINE 411 *Rock Mechanics*	4	MINE 484 *Mine Design-report*	3
MINE 483 Mine Design-mapping	1	AGRN 455 *Recl. of Disturbed Soils*	3
ENGL 102 *Comp. & Rhetoric*	3	Cluster A or B Elective	9
Prof. *Elective*	3	**Total**	**15**
Cluster A or B Elective	6	**Grand Total**	**134**
Total	**17**		

Note: Professional electives are MINE 376, 407, 414, 481, 485, and 486.

Department of Petroleum and Natural Gas Engineering

Sam Ameri, M.S., P.E., Chair
347-A Mineral and Energy Resources Building
E-mail: samuel.ameri@mail.wvu.edu
www.pnge.cemr.wvu.edu

Degree Offered

Bachelor of Science in Petroleum and Natural Gas Engineering

Curriculum in Petroleum and Natural Gas Engineering

Petroleum and natural gas engineering is concerned with design and application aspects of the discovery, production, and transportation of oil and natural gas resources. Professionals in this field must have a thorough understanding of the geological principles relating to the occurrence, discovery, and production of fluid hydrocarbons. The petroleum and natural gas engineer must know and be capable of applying both conventional engineering design principles as well as those pertaining specifically to the field ofpetroleum and natural gas engineering. These are developed in the petroleum engineering courses in the curriculum. In addition, a strong foundation in mathematics and the sciences broadens the future engineer's professional capabilities. Because many engineers will be employed as supervisors or executives, managerial and social skills are also emphasized.

Students are offered the opportunity to enter all phases of the petroleum and natural gas industry in meaningful and important jobs, continue their education towards advanced degrees, or—in some cases—pursue a combination of professional employment and continued education.

The petroleum and natural gas engineering undergraduate program educational objectives are to:

1. Prepare the students for professional practice as petroleum engineers in energy industry, government agencies, or post-graduate education.
2. Provide the students with a foundation for developing their knowledge and skills to effectively formulate, communicate, and implement solutions to problems in cooperation with others.
3. Provide the students with the ability to recognize their obligations to the profession, to their employer, and society.

The foundation for achieving program objectives are established through a rigorous curriculum that provides the students with:

a. An understanding of scientific and engineering principles and the application of these principles in solving petroleum and natural gas engineering problems using modern tools.
b. An integrated design experience leading to a capstone design course.
c. A balanced and rounded education to recognize the need for developing technical communication and teamwork skills, as well as understanding the engineer's professional, ethical, and societal obligations.

The outcomes of the petroleum and natural gas engineering undergraduate program are as follows:

1. Graduates will have a thorough understanding of scientific and engineering principles, and their application in solving petroleum and natural gas engineering problems using theory and modern tools.
2. Graduates will have the ability to integrate their scientific and engineering knowledge to design and conduct experiments, interpret and analyze data, and formulate solutions to petroleum and natural gas engineering design problems.
3. Graduates will have the ability to effectively communicate their ideas and work as a part of a multi-disciplinary team with others.
4. Graduates will recognize the petroleum engineer's responsibilities in professional, ethical, societal, and global contexts.
5. Graduates will recognize the need to acquire the knowledge of contemporary issues and to engage in life-long learning.

These outcomes are achieved by enrolling in rigorous individual courses in all basic areas of petroleum and natural gas engineering, basic science, mathematics, geology, and humanities and social sciences. The petroleum and natural gas engineering curriculum also contains significant laboratory components aimed at reinforcing the knowledge gained in the classroom. In the senior year, electives are offered in which the student may obtain additional depth of knowledge in specific areas of petroleum and natural gas technology. Each student is individually assisted in course selection by an advisor who is a member of the petroleum and natural gas engineering faculty.

Students gain practical experience and first-hand knowledge of many aspects of petroleum and natural gas engineering through close proximity to the industry in West Virginia and surrounding states. Production sites, secondary and enhanced oil recovery projects, compressor stations, gas storage fields, and corporate offices all provide excellent opportunities for study. Additional experience is provided through modern, well-equipped laboratories within the department and the University. Students are urged to gain field experience through summer employment in the industry.

A student admitted to the program must achieve a grade point average of 2.25 or better and a grade of C or better in all petroleum and natural gas engineering (PNGE) courses in order to qualify for the bachelor's degree.

Petroleum and Natural Gas Engineering

First Year

Common first year as listed on page 108.

Second Year

First Semester	Hrs.	Second Semester	Hrs.
PHYS 112 *General Physics*	4	MATH 261 *Elem. Diff. Equat.*	4
MATH 251 *Multivar. Calc.*	4	MAE 243 *Mech. of Materials*	3
MAE 241 *Statics*	3	MAE 331 *Fluid Mech.*	3
ENGL 102 *Comp & Rhetoric*	3	STAT 215 or IMSE 213	3
PNGE 200 *Intro. Pet. Engr.*	3	LSP Elective	3
Total	**17**	**Total**	**16**

Third Year

First Semester	Hrs.	Second Semester	Hrs.
PNGE 332 *Pet. Prop./Phase Beh.*	3	PNGE 310 *Drilling Engr.*	4
EE 306 *Basic Elec. Engr.*	3	PNGE 312 *Drilling Fl. Lab*	1
ECON 201 *Microeconomics*	3	PNGE 333 *Elem. Res. Engr.*	3
GEOL 342 *Struct. Geol.*	3	GEOL Elective	3
MAE 320 *Thermodynamics*	3	ECON 202 *Macroeconomics.*	3
LSP Elective	3	LSP Elective	3
Total	**18**	**Total**	**17**

Fourth Year

First Semester	Hrs.	Second Semester	Hrs.
PNGE 420 *Production Engr.*	3	PNGE 400 *Pet. Engr. Ethics*	1
PNGE 434 *App. Res. Engr.*	3	PNGE 432 *Pet. Res. Lab*	1
PNGE 441 *O&G Property Eval.*	3	PNGE 480 *Pet. Engr. Design*	3
PNGE 450 *Formation Eval.*	3	Professional Elective	3
PNGE 470 *Nat. Gas. Engr.*	4	LSP Elective.	6
Total	**16**	**Total**	**14**

Grand Total **133**

Notes: Recommended professional electives are PNGE 460, 471, 501, or 532.
Recommended geology electives are GEOL 365, 454, or 472.
LSP electives are taken in the University LSP curriculum.
The non-technical electives must be chosen so as to meet the University LSP requirements and the ABET guidelines.

College of Human Resources and Education

Anne H. Nardi, Ph.D., Interim Dean
www.wvu.edu/~hre

Degrees Offered

Bachelor of Science in Speech Pathology and Audiology
Five-Year Integrated Baccalaureate/M.A. in Elementary Education
Five-Year Integrated Baccalaureate/M.A. in Secondary Education

Nature of Program

The College of Human Resources and Education is divided into four academic departments: Advanced Educational Studies; Counseling, Rehabilitation Counseling, and Counseling Psychology; Educational Theory and Practice; and Speech Pathology and Audiology. The college's faculty and staff are located in Allen Hall on the Evansdale campus.

The college offers an undergraduate program in speech pathology and audiology. The college also offers teacher preparation programs in elementary and secondary education in which students earn a baccalaureate degree in a content area or in an area of specialization from the Eberly College of Arts and Sciences and a master of arts in elementary or secondary education by completing a five-year sequence of study. The teacher education programs integrate liberal studies, coursework in pedagogy and the content area, and a three-year sequence of clinical experiences in a professional development school. The College of Human Resources and Education cooperates with other schools and colleges at WVU to prepare teachers in agriculture, art, music, and physical education. The degree programs which prepare students to teach in these areas are housed in the College of Agriculture, Forestry, and Consumer Sciences; the College of Creative Arts; and the School of Physical Education.

The college offers graduate programs of study in counseling, counseling psychology, rehabilitation counseling, special education, speech pathology and audiology, curriculum and instruction, educational leadership, elementary education, reading, secondary education, education foundations, educational psychology, and technology education. The Benedum Collaborative, the International Center for Disability Information, the Center for Learning and Teaching Technologies, the Speech and Hearing Clinic, the Benedum Center for Education Reform at WVU, the Center for Student Advising and Records, and the Reading Clinic are also located in the college.

Accreditation

West Virginia University is fully accredited for the preparation of teachers by the National Council for the Accreditation of Teacher Education (NCATE) and programs are approved by the West Virginia State Department of Education. The Ed.D. and Ph.D. are the highest degrees approved and offered. Students in elementary and secondary education must meet University requirements for admission, retention, and graduation, and West Virginia Department of Education requirements for teacher certification.

The program in speech pathology and audiology is fully accredited by the American Speech-Language-Hearing Association (ASHA). Upon completion of the master's degree in this field, students qualify for certification by ASHA and by the West Virginia Department of Education.

Admission

Admission, curriculum, and degree requirements of the various degree programs of the College of Human Resources and Education are provided in each program section in this catalog. It is the responsibility of the student to take steps to insure that he or she is properly informed of the degree requirements and/or the certification standards being sought. Since certification requirements are changed periodically by the state, the fulfillment of certification requirements as presented in this catalog cannot guarantee compliance with the most recent requirements. Students are therefore encouraged to seek the counsel of members of the faculty, their advisors, and the college certification officer on matters pertaining to degree and certification requirements.

Teacher Education

Elizabeth A. Dooley, Chair, Department of Educational Theory and Practice

Program Purposes and Goals

The curricula for teacher education programs at WVU are the products of cooperative efforts of faculty, students, and practitioners. These groups have engaged in systematic efforts to develop teacher education programs consistent with the mission of the University, the mission of the College of Human Resources and Education, the requirements of the West Virginia Department of Education, and the recommendations of professional organizations and learned societies.

The goals of the WVU teacher education program describe the qualifications that represent the end result of teacher preparation. Graduates of the program should have these qualifications:

- Possess a commitment to and the skills for life-long learning.
- Be effective communicators.
- Recognize that teaching is a professional, moral, and ethical enterprise with well-developed ethical frameworks which facilitate effective teaching.
- Be a facilitator of learning for all students.
- Possess in-depth knowledge of both pedagogy and content, as well as an integrated understanding of these two important knowledge areas.
- Be reflective practitioners who can thoughtfully apply knowledge and experience to practice and critically examine choices.
- Be aware of and have respect for human diversity.
- Be liberally educated: value and integrate knowledge from a wide variety of fields, be creative and open to new ideas, and be able to act constructively in a world characterized by technological, cultural, and societal diversity and change.

The teacher education program is a five-year program culminating in two degrees which are awarded simultaneously; a baccalaureate degree in the content area and a master's degree in education. The program standards for teacher licensure in West Virginia.

Programs for Elementary Education

All students preparing to teach early and middle childhood must complete requirements for the Multi-Subjects K-6* Program. They must also select at least one of the following specialization options.

Specializations for Grades 5-9

French
General science
Language arts
Mathematics
Social studies
Spanish

Specializations for K-12

Special Education, Multi-categorical (BD, LD, MI)

Specializations for Early Childhood

Birth through age four. Pre-kindergarten and kindergarten

Programs for Secondary Education, Grades 5-12 and 9-12

Students preparing to teach secondary education may select approved combinations of specializations in the following subjects and grade levels.

Specializations in Grades 5-12

English
French
General science
German
Mathematics
Social studies
Spanish

Specializations in Grades 9-12

Biology
Chemistry
Journalism
Physics

Admission to Pre-Education

High school students interested in teaching careers should seek admission to the pre-education program when applying to the University. Students may also seek admission to pre-education at any point between entry and successful completion of 59 hours of approved University coursework. To be admitted to pre-education, a student must have an ACT score of 23, an SAT score of 1030, or a high school GPA of 3.0. Students transferring into teacher education must also have an acceptable University GPA. Since formal admission into teacher education cannot occur until 59 hours have been completed, those students admitted to education are designated pre-education students; the general admission requirements for teacher education are described below.

Admission to Teacher Education

Students are admitted to teacher education only in the spring semester. Admissions to teacher education are limited. Within secondary education, enrollment is limited to the capacities of specific content areas. Pre-education students are advised to consult with advisors regarding the availability of the specializations in which they are most interested.

General Requirements for Admission

To be eligible for consideration for admission to teacher education, a student must do the following:

- Complete a minimum of 59 hours of approved University coursework.
- Achieve a 2.75 grade point average (GPA) computed on all approved University work attempted, a 2.5 GPA on work completed in the specialization, and a 3.0 grade point average with no grade below a C on all work completed in professional education.
- Achieve an acceptable level of performance as designated by the State Department of Education and/or the College of Human Resources and Education on the National Teacher Examination Pre-Professional Skills Tests.
- Submit a written portfolio which includes (a) a statement that all general requirements for admission into teacher education have been met, (b) letters of recommendation from faculty in education, (c) letters of recommendation from faculty in the subject area one wishes to teach, (d) evaluation from volunteer experience, (e) passing scores on the PPST, and (f) transcript.
- Complete successfully EDUC 200 and all its prerequisites.
- Complete an approved volunteer or work experience with children or youth.

Admission Process

Applications for admission to teacher education are accepted and reviewed in the spring semester. Students are normally admitted to teacher education in the fourth semester. The credentials of qualified pre-education students from WVU and WVU Potomac State College will be reviewed by the admissions committee, and students are admitted to the specialization of their choice in order of decreasing portfolio scores until the specialization reaches its capacity. If space is not available in the preferred specialization, students may elect to be considered for another specialization or compete for admission in the following year. Minority students may be given special consideration for admission to the major.

Remediation Options

Students who do not meet the skill-proficiency requirements listed under "General Requirements for Admission," may avail themselves of the numerous remediation options on campus, including the Reading and Study Skills Laboratory, the Microcomputer Laboratory, and the Learning Resources Center.

General Retention Requirements

Teacher education students must maintain a 2.75 grade point average in all hours attempted, and 2.50 in area(s) of specialization, and with no grade below a C on all work completed in professional education. Students must achieve an acceptable score on each applicable ETS Praxis subject area test and complete all undergraduate coursework prior to the ninth semester. As applicable, students may fulfill any additional requirements within specific program areas.

Work Taken at Other Institutions

Required professional education courses must ordinarily be taken at WVU. Students who wish to take required courses at other NCATE accredited institutions must have their courses approved by the department chairperson before registering at another institution.

Graduate/Certification Requirements

To be eligible for recommendation for the master of arts in elementary or secondary education, a student must do the following:

- Comply with the general regulations of the University concerning entrance, advanced standing, classification, examination, grades, grade points, etc.
- Complete required courses and the minimum hours of approved courses in education.
- Adhere to the patterns prescribed in completing the subject specialization(s).
- Complete requirements for the approved baccalaureate in subject specialization (for prospective secondary teachers) or multidisciplinary studies (for prospective elementary teachers).
- Present a minimum of 158 hours of approved college credit. (Thirty of these must be approved graduate hours.) A general average of 2.75 as described under "General Requirements for Professional Certification" must be attained for the total hours with a GPA of at least 3.0 in the graduate hours.
- Submit an acceptable professional portfolio.

General Requirements for Professional Certification

Individual candidates apply for professional certification. To teach in the public schools of West Virginia, one must hold a professional certificate issued by the West Virginia Department of Education. To be eligible to receive a professional certificate, the WVU applicant must have done the following:

- Met the minimum State requirements.
- Met the University degree requirements.
- Compiled at least 45 hours of upper-division work and 30 approved graduate hours (WVU standards).

- Achieved a grade point average of at least 2.75 on the total of college credits earned, on the hours earned in professional education, and in each subject specialization.
- Demonstrated competence in supervised practica and internship.
- Complied with the West Virginia Board of Education regulations for Teacher Certification.
- Been recommended for certification by the dean of the College of Human Resources and Education.

All candidates for professional certification in West Virginia must be United States citizens.

Reciprocal Certification Agreements

West Virginia, at the time of this publication, has reciprocal agreements with certain other states for teacher certification. Inquiries about reciprocity should be directed to the Center for Student Advising and Records, 501 Allen Hall.

Calculation of Grade Point Averages

The West Virginia State Department of Education system of calculating grade point averages for certification purposes differs in some respects from the WVU system. For certification, all coursework attempted at WVU and at other institutions of collegiate rank will be considered. If a student earns a grade of D, F, or U in any course taken no later than the term when he or she has attempted a total of 60 hours, and the student repeats this course, the second grade earned will be used in determining the grade point average. The first grade will be disregarded.

The teacher education program uses the West Virginia State Department of Education system of calculating grade point averages only for admission to teacher education programs and professional internships, and for assessing teaching field and education averages. Academic performance and eligibility for graduation are assessed by the system used by WVU and other institutions governed by the West Virginia Higher Education Policy Commission.

Professional Education Sequence Teacher Education Program

All students enrolled in the program will complete the following professional education sequence as part of the five-year program.

Year	Fall	Spring
One	EDUC 100 *Education Colloquium**	Volunteering requirement**
Two	EDUC 100* *Volunteering Req.***	EDUC 200 *Professional Inquiry*
Three	EDUC 301 *Learning I* EDUC 311 *Practicum I*	EDUC 302 *Learning II* EDUC 312 *Practicum II*
Four	EDUC 400 *Instruct. Design & Eval.* EDUC 410 *Practicum III*	EDUC 401 *Managing & Organizing Learning Environments* EDUC 411 *Practicum IV*
Five	EDUC 612 *Prof. internship***** EDUC 602 *Prof. Id.: Teacher as Leader*	Prof. development semester*** EDUC 601 *Context of Education* EDUC 600 *Teacher as Researcher* EDUC 687 *Instructional practicum*

*EDUC 100 is a one-hour course which is to be taken in one of these semesters only. (All freshmen admitted directly to pre-education must take this in the first semester.)

**To be admitted to the major, students must document that they have had experience volunteering/working with children. This requirement may be completed during any semester or combination of semesters or summers prior to the professional inquiry course.

***In addition to the pedagogy courses listed, students also will take a capstone course in their teaching discipline and a elective graduate course during this semester.

****Thirty hours of graduate credit are earned during year five.

Other coursework in pedagogy, content, and liberal studies also is prescribed. Students accepted into pre-education will be provided with specific program information as part of the content of EDUC 100 *Colloquium* which is taken in the fall semester of either the first or second year. Students may also contact the Department of Educational Theory and Practice, (304) 293-3441, or the Center for Student Advising, (304) 293-2705, for information.

Elementary Education

Students preparing to be elementary teachers earn a baccalaureate in multidisciplinary studies and a master's degree in elementary education. The degrees are awarded simultaneously at the end of a five-year program which intertwines the study of liberal arts, the disciplines to be taught, and pedagogy. Graduates earn West Virginia licenses to teach multi-subjects in grades K-6 and in their specialization. Students select from the following specializations: French 5-9, Spanish 5-9, math 5-9, sciences 5-9, social studies 5-9, English/language arts 5-9, early childhood (pre-kindergarten to kindergarten), or special education K-12.* Because of the complexity of dual-degree licensure programs, pre-teacher education and teacher education students are advised in the HR&E Advising Center located in 501 Allen Hall. Please contact the HR&E Advising Center at (304) 293-2705 for more information about this program and its requirements.

*Change under review.

Secondary English Education

Students preparing to be secondary English teachers earn a baccalaureate in English and a master's degree in secondary education. The degrees are awarded simultaneously at the end of a five-year program which intertwines the study of liberal arts, the discipline to be taught, and pedagogy. Graduates earn West Virginia licenses to teach English/ language arts in grades 5-12. Because of the complexity of dual-degree licensure programs, pre-teacher education and teacher education students are advised in the HR&E Advising Center located in 501 Allen Hall. Please contact the HR&E Advising Center at (304) 293-2705 for more information about this program and its requirements.

Secondary Foreign Language Education

Students preparing to be secondary foreign language teachers of Spanish, French, German, or Russian earn a baccalaureate in foreign languages with a major in the appropriate language(s) and a master's degree in secondary education. The degrees are awarded simultaneously at the end of a five-year program which intertwines the study of liberal arts, the discipline to be taught, and pedagogy. Graduates earn West Virginia licenses to teach Spanish in grades 5-12, French in grades 5-12, and German in grades 9-12. (German must be combined with a second field.) Because of the complexity of dual-degree licensure programs, pre-teacher education and teacher education students are advised in the HR&E Advising Center located in 501 Allen Hall. Please contact the HR&E Advising Center at (304) 293-2705 for more information about this program and its requirements.

Secondary Mathematics Education

Students preparing to be secondary mathematics teachers earn a baccalaureate in mathematics and a master's degree in secondary education. The degrees are awarded simultaneously at the end of a five-year program which intertwines the study of liberal arts, the discipline to be taught, and pedagogy. Graduates earn West Virginia licenses to teach mathematics in grades 5-12. Because of the complexity of dual-degree licensure programs, pre-teacher education and teacher education students are advised in the HR&E Advising Center located in 501 Allen Hall. Please contact the HR&E Advising Center at (304) 293-2705 for more information about this program and its requirements.

Secondary Science Education

Students preparing to be secondary science teachers earn a baccalaureate in multidisciplinary studies and a master's degree in secondary education. The degrees are awarded simultaneously at the end of a five-year program which intertwines the study of liberal arts, the discipline to be taught, and pedagogy. Prospective science teachers must combine two of the following options: biology 9-12, chemistry 9-12, physics 9-12, or general science 5-12. Graduates earn the appropriate West Virginia license to teach science. Because of the complexity of dual-degree licensure programs, pre-teacher education and teacher education students are advised in the HR&E Advising Center located in 501 Allen Hall. Please contact the HR&E Advising Center at (304) 293-2705 for more information about this program and its requirements.

Secondary Social Studies Education

Students preparing to be secondary social studies teachers earn a degree in interdepartmental studies with a major in social studies and a master's degree in secondary education. The degrees are awarded simultaneously at the end of a five-year program which intertwines the study of liberal arts, the discipline to be taught, and pedagogy. Graduates earn West Virginia licenses to teach social studies in grades 5-12. Because of the complexity of dual-degree licensure programs, pre-teacher education and teacher education students are advised in the HR&E Advising Center located in 501 Allen Hall. Please contact the HR&E Advising Center at (304) 293-2705 for more information about this program and its requirements.

Speech Pathology and Audiology

Lynn R. Cartwright, Ed.D., Chair

Program Objectives

The Speech Pathology and Audiology Department is committed to the preparation of students interested in graduate study and eventual careers in speech-language pathology or audiology. The pre-professional undergraduate program emphasizes education in the following: liberal studies; basic speech and hearing sciences; anatomy and physiology of the speech and hearing system; normal development and behavior in speech, hearing, and language; awareness of cultural diversity and its relationship to communication; and an introduction to communicative disorders.

Career Prospects

The professions of speech-language pathology and audiology are exciting fields wherein professionals provide services to individuals with communication disorders. The demand for certified practitioners is continually increasing; consequently, job prospects remain very good. The pre-professional undergraduate program and graduate study in either speech-language pathology or audiology enable graduates to seek employment in a variety of settings. Speech-language pathologists and audiologists are employed in schools, hospitals, rehabilitation centers, community clinics, physicians' offices, and private practice.

Pre-Speech Pathology and Audiology

Admission

Normally, students are first admitted to the pre-SPA program of study and matriculate as such during the freshman and sophomore years. Pre-SPA students will be assigned an advisor in the Department of Speech Pathology and Audiology.

To qualify for admission, incoming freshmen must present an overall high school GPA of 3.0 or higher, 1050 or higher on the SAT, or 23 on the ACT.

Students who transfer into pre-SPA during the freshman or sophomore year from either another major at WVU or from another university must present a grade point average of 2.75 for all undergraduate coursework taken prior to the time of transfer.

Requirements

Students are considered pre-SPA until they have met the requirements specified below and have applied and been accepted into the SPA degree program.

1. Completion of at least 58 academic hours. Specific requirements include partial completion of the University Liberal Studies Program (LSP), and others as listed below:
   a. Cluster A: at least six academic hours completed.
   b. Cluster B: LING 101 and PSYC 101.
   c. Cluster C: at least 11 academic hours completed. Must include:
      Lab course = BIOL 101 and 103 *or* BIOL 102 and 104 *or* PHYS 101;
      Math course = College algebra (MATH 126) or a higher-level course;
   In addition to the lab course above, each student must select at least four additional academic hours from the following science courses:
      4 hr. courses (select at least one)
      BIOL 101 and 103; BIOL 101 and 104; BIOL 115; CHEM 111, 112, 115, 116; CS 101, 110; PHSC 111, 121; PHYS 101, 102, 111.
      or
      3 hr. courses (select at least two)
      BIOL 235, 337; HN&F 171; MDS 126.
   d. Completion of English 101 and 102.
2. Completion of SPA 200 with a minimum grade of B.
3. Overall GPA of 3.0.

These requirements are subject to change. Interested students should contact the Department of Speech Pathology and Audiology for information on current requirements.

B.S. Degree Program in Speech Pathology and Audiology

Admission

After completing all pre-SPA requirements listed above, a student must apply for admission to the degree program by completing an application form obtained from the Department of Speech Pathology and Audiology in 805 Allen Hall. It is the student's responsibility to obtain an application form and submit it to the Department of Speech Pathology and Audiology between the deadline dates of January 15 and February 15. No applications will be accepted after February 15. After the application has been reviewed and verified, the student will receive a letter summarizing the department's admission decision. Students will be ranked according to their overall GPA for all undergraduate coursework. The top 45 students will be admitted to the B.S. degree program at the beginning of the junior year. Students who are not admitted must declare another major immediately and officially transfer to that department.

Following admission to the degree program, the student must continue to meet GPA standards set by the department in order to continue in the program and graduate with a degree in speech pathology and audiology.

Graduation Requirements

A total of 128 academic credit hours, including all SPA requirements, is required for the degree of bachelor of science in speech pathology and audiology. The following are specific requirements:

1. Successful completion of the University Liberal Studies Program (LSP), including all pre-SPA required courses plus Statistics 101 or Economics 125 (this is a required course for SPA which meets the University mathematics skills component).
2. Successful completion of 17 hours of supporting area courses relating to natural sciences, normal/abnormal growth and development, and related issues.
3. Successful completion of a minimum of 53 hours of academic coursework in SPA.
4. Successful completion of minimum requirements in clinical practicum.
5. A cumulative GPA in all speech pathology and audiology courses and overall GPA which meets standards set by the department.

Davis College of Agriculture, Forestry, and Consumer Sciences

Cameron R. Hackney, Ph.D., Dean, Director of the Agricultural and Forestry Experiment Station
Dennis K. Smith, Ph.D., Associate Dean, Academic Affairs
William E. Vinson, Ph.D., Associate Director, Agricultural and Forestry Experiment Station
Kenneth E. Martin, Ph.D., Director, Extension Center for Agriculture and Natural Resource Development
Paul E. Lewis, Ph.D., Director, Division of Animal and Veterinary Sciences
Janice I. Yeager, M.S., Director, Division of Family and Consumer Sciences
Joseph F. McNeel, Ph.D., Director, Division of Forestry
Barton S. Baker, Ph.D., Director, Division of Plant and Soil Sciences
Peter V. Schaeffer, Ph.D., Director, Division of Resource Management
www.caf.wvu.edu

Degrees Offered

Bachelor of Science
Bachelor of Science in Agriculture
Bachelor of Science in Family and Consumer Sciences
Bachelor of Science in Forestry
Bachelor of Science in Landscape Architecture
Bachelor of Science in Recreation

Majors

The Davis College of Agriculture, Forestry, and Consumer Sciences is organized into five divisions: Animal and Veterinary Sciences; Family and Consumer Sciences; Forestry; Plant and Soil Sciences; and Resource Management. There are eighteen major areas of study in which undergraduate students can earn a baccalaureate. These majors are listed below by the division in which they are taught. More detailed information on each major is provided in the appropriate division's section on the following pages.

Division of Animal and Veterinary Sciences:
Animal and Veterinary Sciences; Biochemistry

Division of Family and Consumer Sciences:
Child Development and Family Studies; Human Nutrition and Foods; Interior Design; Textiles, Apparel, and Merchandising

Division of Forestry:
Forest Resources Management; Recreation, Parks, and Tourism Resources; Wildlife and Fisheries Resources; Wood Industries; General Forestry (Pre-major)

Division of Plant and Soil Sciences:
Agronomy; Basic Sciences; Environmental Protection; Horticulture

Division of Resource Management:
Agribusiness Management and Rural Development; Agricultural and Environmental Education; Environmental and Natural Resource Economics; Landscape Architecture; General Agriculture (Pre-major)

Nature of Program

Students in the college study in programs that emphasize: the biological sciences, including the study of animals, nutrition, plants, trees, or soils; the area of business, including fashion merchandising and agribusiness management; the social sciences, including recreation, child development, and family studies; the creative arts, including the innovative and functional design of landscapes and interiors; and the environmental sciences, including economic policy, conservation, and resource management. The college and its curricula stress the environment, the production and distribution of

agricultural and forestry products, and relationships among humans as they live and work in various environments. Our majors are intended to foster the wise management, utilization, and conservation of our soil, water, forests, wildlife, domestic animals, food, and fiber.

The college is also the site of the West Virginia University Agricultural and Forestry Experiment Station. Extensive research programs are supported in such areas as child development, family studies, agronomy, soil quality, wildlife protection, forest utilization and management, horticulture, geographic information systems, dairy, livestock and poultry production, natural resources, and rural development. The University maintains extensive lands, including farms and forests, to support the University's land-grant mission. Students and professors use these areas for both instruction and research, and the information generated at these sites is shared in the classroom and throughout the state.

Accredited Programs

The following programs within the college are accredited by nationally and/or internationally recognized organizations: Landscape Architecture by the Society of Landscape Architecture; Forest Resource Management by the Society of American Foresters; Wood Industries by the Society of Wood Science and Technology; Recreation and Parks Management by the National Recreation and Parks Association; Agricultural and Environmental Education by the National Council for Accreditation of Teacher Education; Interior Design by the Foundation for Interior Design Education Research; and the Didactic Undergraduate Program in Dietetics by the American Dietetic Association. In addition, the WVU Child Development Laboratory is accredited by the National Academy of Early Childhood Programs.

Honoraries and Student Organizations

Students in the college are encouraged to become active in honoraries and student professional associations and organizations. Those with a sufficiently high grade point average may be selected for membership in Phi Kappa Phi, the University-wide honorary recognizing excellence in scholarship. Within the college, outstanding students may be chosen for membership in Alpha Tau Alpha, Gamma Sigma Delta, Phi Upsilon Omicron, or Alpha Zeta. There are over twenty student clubs and organizations sponsored by the college.

Admission

Graduates of accredited high schools are required to present credit for four units of English including courses in grammar, composition, and literature; three units of social studies including U.S. history; three units of college preparatory mathematics (algebra I, algebra II, and plane geometry); two units of laboratory science (biology, chemistry, physics, or other courses with a strong laboratory orientation); and eight elective units chosen from the areas of computer science, fine arts, foreign languages, humanities, and typing.

All students are admitted directly to the college and are assigned a faculty advisor.

Transfer Credits

Students transferring into the college from one- or two-year technical programs, or from unaccredited programs, may be required to demonstrate proficiency for any required course offered by the college for which transfer credit is sought. All credits are accepted subject to the regulations of the Office of Admissions and Records.

Assigned/Special Topics

A maximum of 12 credit hours for courses titled *Assigned* or *Special Topics* may be counted toward fulfilling the requirements for a bachelor's degree in the college.

Honors

Outstanding academic achievement is recognized by awarding President's List and Dean's List status to students who obtain a 4.0 grade point average or 3.5 grade point average, respectively. Students must be enrolled full-time to be eligible for such recognition.

Students may receive *summa cum laude* (with highest honors, a minimum 3.8 grade point average); *magna cum laude* (with high honors, a minimum 3.6 grade point average to less than a 3.8 grade point average); or *cum laude* (with honors, a minimum 3.4 grade point average to less than a 3.6 grade point average) recognition upon graduation. These guidelines are set by the University.

Applications for Graduation

All candidates for the bachelor's degree must fill out an application for graduation in room 1002 of the Agricultural Sciences Building at the beginning of the semester in which they expect to receive their degrees.

Academic Warning/Suspension/Probation

A student with a grade point average less than 2.0 at the end of a period of enrollment may be placed on academic warning. Students on academic warning shall be limited to a maximum of 15 credit hours per semester. Students shall be notified in writing of their academic status by the associate dean.

A student whose grade point average is below that allowed by WVU at the end of a period of enrollment shall be suspended by the Davis College of Agriculture, Forestry, and Consumer Sciences and notified in writing by the associate dean. Students may be reinstated by petitioning the Academic Standards Committee to:

1. Enroll for the summer session to eliminate the grade point deficiency.
2. After a minimum of one suspension semester, petition the Academic Standards Committee for reinstatement.
3. After one calendar year, a student may enroll in the college, school, or program of his or her choice but under conditions of probation as set forth by the college, school, or program where the student is enrolled.

Students reinstated will be placed on academic probation: they may enroll for a maximum of 15 credit hours and must maintain a minimum 2.25 grade point average for each semester enrolled. The Academic Standards Committee has the option of imposing special conditions for students on academic probation.

Division of Animal and Veterinary Sciences

Paul E. Lewis, Ph.D., Director

Programs of Study

As a student in this division, you may pursue a degree which enables you to do graduate work, go into commercial agriculture, or work for federal or state agencies, the food processing industry, or other areas of food and agriculture. The pre-professional program meets requirements for entry into professional colleges. Many pre-professional students obtain their bachelor's degrees after three years of pre-professional study and one year of professional study.

Courses that you will take in the division include animal production, biochemistry, breeding and genetics, food science, nutrition, pathology, and physiology. To assist in equipping yourself for one of the many varied careers in animal agriculture, you will take supporting courses in other divisions of the Davis College of Agriculture, Forestry, and Consumer Sciences and in other colleges. The programs are flexible enough to permit you to obtain a broad background and take sufficient courses in one area during the last two years to prepare you for your first job.

Animal and Veterinary Sciences Curriculum
Bachelor of Science in Agriculture

This curriculum will provide you with the opportunity to acquire the necessary background in agricultural economics, agronomy, breeding, nutrition, pathology, and physiology to prepare for a career in animal, dairy, or poultry production and management. Food sciences courses are available under the curriculum if you are interested in preparing for opportunities in food processing related to dairy, poultry, and meat products.

Curriculum Requirements	Hrs.
English Composition and Rhetoric (or conformity with University English requirements)	6
Arts and Humanities (Cluster A)	12
Social and Behavioral Sciences (Cluster B)	12
Natural Sciences (Cluster C included) (must elect a minimum of eight credits in biology; eight credits in chemistry; three credits in college algebra or equivalent)	24
Courses in Agriculture	45
Elect a minimum of a three-credit course, excluding *Assigned Topics*, in each of the following categories: 1. Animal science 2. Plant science 3. Soil science 4. Agricultural economics Elect additional courses to obtain a total of 45 hours in the college.	
Free Electives	37
Total	**136**

Animal and Veterinary Science Curriculum
Bachelor of Science

The curriculum in science, with its flexible design, provides you with the opportunity to acquire the necessary background in agricultural biochemistry, chemistry, mathematics, physics, and modern concepts of biology in preparation for professional schools of veterinary medicine, human medicine, dentistry, optometry, pharmacy, or graduate study in such fields as agricultural biochemistry, animal breeding, animal physiology, and nutrition. Selection of individual courses will be your responsibility in consultation with an advisor.

Curriculum Requirements	Hrs.
English Composition and Rhetoric (or conformity with University English requirements)	6
Arts and Humanities (Cluster A)	12
Social and Behavioral Sciences (Cluster B)	12
Natural Sciences (Cluster C included) (A minimum of two courses in each of biology, chemistry, physics, and calculus are required. You may substitute advanced chemistry courses for calculus to meet degree requirements. This ordinarily means organic chemistry and/or biochemistry.)	40
Courses in Agriculture	24
Free Electives	34
Total	**128**

Biochemistry
Bachelor of Science

The curriculum in biochemistry prepares you for careers requiring a strong background in basic principles of the physical and life sciences. Students completing a biochemistry major are prepared for professional employment in the expanding fields of agricultural and environmental sciences, the chemical industry, health-related industries, and biotechnology-based industries. The curriculum provides you with the interdisciplinary background in biochemistry, biology, chemistry, mathematics, physics, and molecular biology necessary as preparation for professional schools of human and veterinary medicine, dentistry, optometry, and pharmacy. It also provides strong preparation for graduate study in fields such as animal and plant agriculture, biochemistry, biology, biotechnology, chemistry, food science, nutrition, and physiology.

Curriculum Requirements	**Hrs.**
English Composition and Rhetoric	
(ENGL 101 and 102 or conformity with University requirements)	6
Liberal Studies Program	
Arts and Humanities (Cluster A)	12
Social and Behavioral Sciences (Cluster B)	12
Biochemistry Core Curriculum	
(Includes University Cluster C and Math requirements)	48
Orientation to Biochemistry	1
Math 155 and 156	8
Physics 101 and 102, or Physics 111 and 112	8
Biology 115, 117, 219, and 310	15
Chemistry 115, 116, 233, 234, 235, and 236	16
Concentration Area	30
30 hours of coursework beyond the biochemistry core selected from courses in Agriculture, Forestry, and Consumer Sciences or Biochemistry (Med. School)	
Chemistry 215, 341, and 342	8
Biology 313 or 410	3
Senior Seminar	1
Electives	9
Total	**129**

Biochemistry Program Honors

The option of graduating with biochemistry program honors is available to students with a 3.5 overall grade point average and the approval of department faculty. Graduation with biochemistry program honors includes a senior thesis based upon an approved research project conducted under the supervision of a faculty mentor. For further information and to apply for admission, qualified students should consult their advisors.

Pre-Professional Programs (Veterinary Medicine, Human Medicine and Allied Health professions)

The bachelor of science programs in animal and veterinary science and biochemistry are designed to provide you with the academic requirements for entry into professional schools or colleges of veterinary medicine. WVU has agreements with Ohio State University and with the Southern Regional Education Board. In order to qualify for these positions, you must have been a West Virginia resident for at least the past five years at the time of application. Applicants for admission to these colleges of veterinary medicine must present at least 78 semester hours of acceptable credit. Since a maximum of thirteen eligible students are accepted each year, alternate goals in either of the other degree programs are urged for all pre-professional students.

Applicants with a grade point average of 3.0 or above will be given first consideration for admission to these institutions.

If you have completed 90 hours of course work at WVU, or 90 hours at institutions within the West Virginia state system of higher education, including at least 36 at WVU, and have completed all required courses for the degree, you may transfer credit from a veterinary college to WVU and receive the bachelor's degree.

Division of Family and Consumer Sciences

Janice I. Yeager, M.S., Director

Programs of Study

A program similar to the Division of Family and Consumer Sciences has been a part of WVU since its founding. Initially, the unit was called domestic arts, then home economics, and more recently, family resources. Today, the division provides high-quality academic programs that respond to changing needs of individuals and families as well as to developments in knowledge and technology, and changing resources.

The mission of the Division of Family and Consumer Sciences is to provide high-quality undergraduate and graduate education, conduct basic and applied research, and engage in creative and scholarly activity. The division contributes to the well-being of residents of West Virginia through on-campus programs, public outreach, and service. Programs are local, regional, national, and international in scope and promote efficient and wise use of natural and human resources. Leadership is provided in the broad field of family and consumer sciences which includes the following disciplines: child development and family studies; human nutrition and foods; interior design; and textiles, apparel, and merchandising. The WVU Child Development Laboratory is managed by faculty in this unit.

Accreditation

The interior design program is accredited by the Foundation for Interior Design Education and Research. The undergraduate didactic program in dietetics has been approved by the American Dietetic Association. The graduate internship program received similar ADA approval.

Honorary Society

Phi Upsilon Omicron, a national honor society in family and consumer sciences, is open for membership by invitation to outstanding students.

Student Professional Organizations

Student professional organizations provide service activities, social events, and extended learning opportunities, including field trips and guest speakers, for students in each discipline. Students are encouraged to participate in one or more of the following groups:

American Society of Interior Designers (student chapter)
Fashion Business Association
Student Dietetic Association
West Virginia University Association for Young Children

Admission Requirements

Admission requirements for the division are the same as those for admission to WVU.

Child Development and Family Studies

Bachelor of Science in Family and Consumer Sciences

This program area provides students with a choice of two option areas, each of which is based on the certification recommendations made by the professional organizations in each field of interest. The birth through pre-kindergarten early childhood education option leads to the possibility of applying for professional certification from the State Department of Education in birth through pre-kindergarten. The family life education option prepares students for certification in family life education.

The birth through pre-kindergarten early childhood education option focuses on the social, emotional, intellectual, and physical development of children. Students are trained to plan programs, perform developmental assessments, and interact with young children in developmentally appropriate ways. Settings for internship experiences include the WVU Child Development Laboratory (Nursery School) for preschool children and placements in childcare centers to work with infants and toddlers. Upon graduation, students may apply for the State Department of Education Certification in birth through pre-kindergarten.

The family life education option provides the basic education for students interested in working with families, including older children, parents, or adults working on relationship issues. The student takes courses that support the development of knowledge and skills in the nine family life substance areas selected by the National Council of Family Relations as essential for an individual seeking certification as a family life educator. The certification is a voluntary credential that requires the individual to complete a degree in an approved program and to have at least two years of work experience in family life education settings. This program has been approved by the National Council on Family Relations. All students are required to complete internships at community family-focused agencies. Students in this option may wish to consider completing a certificate in women's studies, gerontology and/or disability studies.

Grade Information

Students must earn a C or better in all CDFS courses. If the student receives a D or F in a CDFS course, the course must be taken until a C or better is obtained. The credits associated with a D grade earned in a CDFS course will not count toward the 129 credit hours required for graduation. Students transferring into Child Development and Family Studies from other program areas in the University or from other universities must have a 2.5 grade point average for admission to this program. The following courses are to be taken during the senior year only: CDFS 412, 413, and 415. In addition, F&CS 320 and 321 are to be taken during the junior or senior years.

Career Opportunities

Graduates of the program may work with children in a variety of settings including Head Start, nursery schools, day care centers, prisons, hospitals, and human service agencies. They also work with parents and families in educational settings. Salary is dependent on the qualifications of the graduate, the structure (private, franchised, government supported) of the hiring agency, and the geographic location. The child development and family studies graduate is provided with a foundation for graduate work in a variety of social science disciplines.

Suggested Curricula—Birth Through Pre-Kindergarten Early Childhood

First Year	Hrs.	Second Year	Hrs.
ENGL 101	3	ENGL 102	3
BIOL 101, 103	4	CHPR 172	3
PE 139 *or* 140	2	PSYC 101	3
CDFS 110, 112	6	CDFS 210, 212	9
COMM 100, 102	3	HN&F 171	3
MATH 124 *or* 121	3	CS 101	4
SOCA 105	3	SOCA 101	3
Cluster A	3	F&CS 265	3
Electives	6	Cluster A	3
Total	**33**	**Total**	**34**

Third Year	Hrs.
EDUC 100	3
BUSA	6
CDFS 211, 316, 491	9
F&CS 381	3
EDUC 414 *or* THET 461	3
Electives	5
Cluster A	3
Total	**32**

Fourth Year	Hrs.
SPED 350 *or* SPA 278	3
F&CS 491	3
HMFE 460	3
CDFS 412, 413, 415	9
Electives	6
Cluster A	3
C&I 410, 411	6
Total	**33**

Suggested Curricula—Family Life Education

First Year	Hrs.
ENGL 101	3
BIOL 101, 103	4
PSYC 101	3
CDFS 110, 112	6
COMM 100, 102	3
MATH 124 *or* 121	3
Cluster A	6
Electives	4
Total	**32**

Second Year	Hrs.
ENGL 102	3
CHPR 172	3
SOCA 105	3
CDFS 210, 212	6
SW 105	3
HN&F 171	3
CS 101	3
MDS 122	3
F&CS 265	3
Total	**30**

Third Year	Hrs.
SOCA 221	3
CDFS 211, 316	6
F&CS 381	3
EDUC 200	3
COMM 202	3
Cluster A	6
Electives	9
Total	**33**

Fourth Year	Hrs.
F&CS 491	6
CDFS 412, 413, 415	9
CDFS 320, 321	6
MDS 212	3
HMFE 460	3
Electives	6
Total	**33**

Human Nutrition and Foods

Bachelor of Science in Family and Consumer Sciences

This four-year curriculum meets the academic requirements for membership in the American Dietetic Association and leads to a bachelor of science degree. After completion of the curriculum in dietetics, seniors are eligible to apply for a highly competitive dietetic internship. Acceptance into an internship is not guaranteed. The dietetic internship involves an additional one to two years, depending on the site and whether graduate study is included. Upon completion of the internship, the graduate is eligible to take the examination to become a registered dietitian (RD).

Students are required to complete family and consumer sciences core courses as well as courses in food science, nutrition, food service management, sociology, psychology, economics, chemistry, biology, physiology, and microbiology. Students are encouraged to select electives in areas which support anticipated career preferences, e.g., business, food science, nutritional biochemistry, advertising, writing, and exercise physiology.

Career Opportunities

The goal of the majority of graduates is to begin their professional careers as registered dietitians—focusing on providing medical nutrition therapy and nutrition education for individuals in the hospital, community, corporate, and/or educational settings. Some elect to become administrative dietitians who are responsible for provision on a large food service scale. There are opportunities in research, the federal government, public school systems, residential facilities, and industry. Nationwide, job opportunities are very good.

Suggested Curricula—Human Nutrition and Foods

First Year	Hrs.
ENGL 101	3
BIOL 101 & 103	4
MATH 126	3
SOCA 105	3
CDFS 110	3
CHEM 115, 116	8
HN&F 171	3
PSYCH 101	3
Cluster A	3
Total	**33**

Second Year	Hrs.
ENGL 102	3
BIOL 102 and 104	4
HN&F 271, 348, 350	12
F&CS 265	3
CHEM 231	4
ANPH 301 *or* PSIO 241	3-4
STAT 211	3
Cluster A	3
Total	**35-36**

Third Year	Hrs.
ACCT 201 *or* ARE 110	3
HN&F 472, 474, 353	11
BIOC 339	3-4
ECON 201	3
Cluster A	3
BUSA 320	3
PSYC 251	3
ENVM 241	4
Total	**33-34**

Fourth Year	Hrs.
HN&F 460, 461, 494	6
ENGL 202	3
Cluster A	3
HMFE 460	3
Electives	14
Total	**29**

Interior Design

Bachelor of Science in Family and Consumer Sciences

Students in this program which, is accredited by the Foundation for Interior Design Education Research (FIDER), learn to identify, research, and creatively solve problems pertaining to the function and quality of the interior environment. They gain specialized knowledge of interior construction, building codes, equipment, materials, furnishings, and aesthetics. Students engage in programming, design analysis, and space-planning relative to interiors. They prepare drawings and documents that detail their recommendations for aesthetically pleasing interiors that also protect the health, safety, and welfare of the public.

Offering a number of special opportunities to students, the program is known for the amount of hands-on experience it makes available to its majors. The student professional organization, the American Society of Interior Designers, is active on campus and sponsors various tours and trips to enhance the learning experience. Through Interior Design 400, seniors in the program may intern in a professional environment. While earning credit, students are able to learn and work under practicing designers. Student design competitions are another source of professional experience for interior design majors.

Midway through the interior design program, students submit their design work to a panel of faculty and professional designers for evaluation. A critique of the student's work is returned to the student noting his or her strengths and areas needing improvement. In concert with his or her advisor, the student prepares a plan for maximizing strengths and improving area(s) of weakness.

Career Opportunities

Employment in design occupations is expected to continue to grow. Interior designers often work for design firms, architectural firms, department and home furnishing stores, or hotel and restaurant chains. Some designers do freelance work full-time, part- time, or in addition to a salaried job.

Beginning designers usually receive on-the-job training and normally need one to three years of apprenticeship before they advance to higher level positions. Experienced designers in large firms may advance to chief designer, design department head, or other supervisory positions. Some experienced designers open their own firms.

Suggested Curricula—Interior Design

First Year

First Semester	Hrs.
ID 100	1
ID 110	3
TA&M 140	3
Cluster A Foreign Language	3
ENGL 101	3
POLS 103	3
Total	**16**

Second Semester	Hrs.
ID 200	3
Cluster A Foreign Language	3
ART 111 *or* 112	3
MATH 124 *or* 121	3
CDFS 110	3
Elective	1
Total	**16**

Second Year

First Semester	Hrs.
ID 125	3
ID 155	3
ID 230	3
ENGL 102	3
ART 105	3
Elective	1
Total	**16**

Second Semester	Hrs.
ID 225	3
ID 235	3
ID 260	3
ID 270	3
TA&M 240	3
Elective	1
Total	**16**

Third Year

First Semester	Hrs.
ID 325	2
ID 355	3
ID 420	3
Cluster C Lab course	4
F&CS 381	3
Cluster B PSYC 101	3
Total	**18**

Second Semester	Hrs.
Art History	3
Photography	3
Language	3
Cluster A	3
Cluster B	3
Total	**15**

Fourth Year

First Semester	Hrs.
ID 375	3
Elective	1
HMFE 460	3
BUSA	3
Cluster B	3
Cluster C	4
Total	**17**

Second Semester	Hrs.
ID 455	3
BUSA	3
BUSA	3
Cluster C	3
Elective	3
ID 450	1
Total	**16**

Minimum Program Requirements Description and Guide

The following minimum requirements are set to insure that students who graduate from the program will have the appropriate skill level and knowledge to succeed in this competitive field.

First-Year Level

I. Enrollment in the first-year level is not limited. Sophomore, junior, and senior class levels are limited to 20 students each.
   A. The following first-year courses have open enrollment: ID 100, ID 110, ID 200, and TA&M 140.
   B. To continue in the program beyond the first year, students must meet the following requirements:
      1. Maintain at least a cumulative 2.5 grade point average in the major's required first-year classes.
      2. Maintain a 2.25 overall GPA.
      3. Earn a minimum grade of C in the above required first-year classes.

C. If more than 20 students meet the above requirements and wish to continue in the interior design major, then students will be selected based upon:
   1. Cumulative GPA ranking in the major's required first-year classes.
   2. Overall GPA, excluding work prior to the first year in interior design.
   3. If needed, a faculty interview.

Sophomore, Junior, and Senior Level

I. All interior design students are required to maintain at least an overall 2.25 GPA.
   A. Students' GPAs will be monitored each semester.
   B. Any student who has an overall GPA below 2.25 will be notified of the deficiency and will not be permitted to enroll in interior design courses.
   C. Students who have not been permitted to enroll in ID courses because of a low overall GPA may enroll in ID courses after meeting the 2.25 overall GPA, space permitting.

II. All interior design students are required to earn at least a C in ID 110, 125, 155, 200, 225, 230, 235, 260, 270, 325, 355, 375, 420, 450, 455, TA&M 140, 240.
   A. Students' grades in each of the above courses will be monitored each semester.
   B. Any student who has earned a grade of D or lower in any of the above courses will be notified of the problem and will not be permitted to enroll in the next ID studio course.
   C. Students who have not been permitted to enroll in the next ID studio course because of receiving a grade of D or lower for one of the listed courses may correct the problem by successfully repeating the course or courses, space permitting.

III. The interior design studio courses are to be taken in an uninterrupted sequence (ID 125, 155, 225, 235, 355, 375, and 455). Students who step out of this sequence will be permitted to enroll for the next sequential studio course, only if space permits.

IV. Studio work must meet a minimum professional level of competence.
   A. A portfolio will be submitted for assessment to a jury composed of interior design faculty.
   B. The jury will identify strengths and weaknesses, and will meet with students individually to discuss findings and strategies for progress.

Textiles, Apparel, and Merchandising

Bachelor of Science in Family and Consumer Sciences

All students in the program obtain a broad-based background in textiles, apparel, and merchandising. Students may pursue a merchandising option, an apparel design/product development option, or an analytical or marketing emphasis. Electives include a fashion merchandising internship in which students can apply textile, apparel, and merchandising subject matter to an actual work situation in marketing or retailing. A fashion merchandising study tour enables students to observe the textile, apparel, and retail industries and to view historic costume collections. Minors are available in areas such as business and foreign languages.

There also is the opportunity to enter student design and research competitions and exhibitions sponsored by industry, professional societies, and the University. A student organization, the Fashion Business Association, enriches the student experience by bringing working professionals to campus to share their experiences and provides students with opportunities to develop their leadership qualities. The TA&M curriculum consists of a minimum of 129 credit hours. Students must earn a C or better in the following courses: TA&M 140 *Introductory Textiles;* TA&M 220 *Sociological-Psychological Aspects of Dress;* and TA&M 230 *Apparel Construction and Fitting.* In addition, students must achieve a 2.5 grade point average during the two semesters prior to their senior year to be eligible for TA&M 491 *Fashion Merchandising Internship.* Students are encouraged to seek summer employment in the textile, apparel, or retail fields in order to gain experience and integrate course work into real-world settings.

Career Opportunities

Positions in retailing include buying, merchandising, managing, coordinating, and promoting fashion goods. Placement may be found with specialty stores, mass merchandisers, discount operations, small and large department store organizations, and with resident and corporate buying offices. In the textile and apparel industries, design, product development, wholesale marketing, management, merchandising, and promotion positions are available. All graduates are prepared for entry-level positions or advanced study.

Suggested Curricula—Business Administration Option

First Year

First Semester	Hrs.	Second Semester	Hrs.
TA&M 120	3	TA&M 140	3
CDFS 110	3	SOCA 105	3
ENGL 101	3	Cluster A	3
MATH 124 *or* 126 *or* 129	3	Cluster A	3
Cluster A *or* C	3 or 4	Cluster C	3 or 4
Total	**15-16**	**Total**	**15-16**

Second Year

First Semester	Hrs.	Second Semester	Hrs.
TA&M 220	3	TA&M 221	3
TA&M 230	3	TA&M 231	3
ENGL 102	3	CS 101	4
PSYC 101	3	ADV 215	3
ECON 201	3	Cluster B	3
Total	**15**	**Total**	**16**

Third Year

First Semester	Hrs.	Second Semester	Hrs.
BUSA 320	3	BUSA 330	3
ENGL 202	3	TA&M 321	3
Cluster A	3	TA&M 340	3
ACCT 201	3	TA&M Elective	3
F&CS 381	3	Emphasis Restricted Elective	3
HMFE 265	3	General Elective	1-3
General Elective	1-3	**Total**	**16-18**
Total	**19-21**		

Fourth Year

First Semester	Hrs.	Second Semester	Hrs.
TA&M 420	3	TA&M Elective(s)	3-4
TA&M Elective	3	Cluster A *or* C	3-4
TA&M Elective	3	Emphasis Restricted Elective	6
HMFE 460	3	ARE 461	3
Emphasis Restricted Elective	3	**Total**	**15-17**
Total	**15**		

Suggested Curricula—Apparel Design/Product Development Option

First Year

First Semester	Hrs.	Second Semester	Hrs.
TA&M 120	3	TA&M 140	3
CDFS 110	3	SOCA 105	3
ENGL 101	3	PSYC 101	3
MATH 124, 129 *or* 126	3	Cluster A	3
Cluster A *or* C	3 or 4	Cluster C	3-4
Total	**15-16**	**Total**	**15-16**

Second Year

First Semester	Hrs.	Second Semester	Hrs.
TA&M 220	3	TA&M 221	3
TA&M 230	3	TA&M 231	3
ENGL 102	3	Emphasis Restricted Elective	3
ECON 201	3	CS 101	4
Cluster A *or* C	3 or 4	Cluster A	3
Total	**15-16**	**Total**	**16**

Third Year

First Semester	Hrs.	Second Semester	Hrs.
TA&M 433	3	TA&M 320	3
F&CS 381	3	TA&M 332	3
BUSA 320	3	TA&M 340	3
Emphasis Restricted Elective	3	ACCT 201	3
SOCA *or* PSYC *or* ECON (Cluster B)	3	ADV 215	3
General Elective	1-3	**Total**	**15**
Total	**16-18**		

Fourth Year

First Semester	Hrs.	Second Semester	Hrs.
TA&M 420	3	BUSA 330	3
TA&M Elective	3	ARE 461	3
TA&M Elective	3	ENGL 202	3
HMFE 460	3	Emphasis Restricted Elective	3
Cluster A	3	General Elective	1-3
Emphasis Restricted Elective	3	**Total**	**13-15**
Total	**18**		

Division of Forestry

Joseph F. McNeel, Ph.D., Director
Ray R. Hicks, Forest Resources Management Coordinator
Steve Selin, Recreation, Parks, and Tourism Resources Coordinator
Kyle Hartman, Wildlife and Fisheries Coordinator
James P. Armstrong, Wood Science Coordinator

Programs of Study

If you are interested in natural resources and the out-of-doors, you may be interested in one of the four curricula offered by the Division of Forestry. Those include forest resources management; recreation, parks, and tourism resources; wildlife and fisheries resources; and wood industries. If you wish to be admitted to our division but are unsure about your major, you can be admitted to the general forestry curriculum with a faculty member to advise you until a program major has been selected. If you have chosen a program major, you will be admitted directly to the major and be assigned a faculty advisor at your first registration.

The division, which has excellent facilities, is located in Percival Hall on the Evansdale campus in close proximity to the Evansdale Library and the Evansdale Residential Complex. In addition, 10,400 acres of forested tracts, including the 7,000-acre University Forest, are located near the campus and are used as extensive outdoor laboratories. The Westvaco Natural Resource Center is the focal point of the division's teaching, research, and service activities at the University Forest.

Transfer Credits for Professional Courses

If you are a transfer student entering the Division of Forestry from a one- or two-year technical school or from a four-year unaccredited forestry school, you must take an advanced standing examination to demonstrate proficiency in any required professional

course offered by the Division of Forestry for which transfer credit is sought. This rule also applies to courses in land surveying. Advanced standing examinations are given after you have enrolled in the Division of Forestry. All other credits are accepted subject to the regulations of the Office of Admissions and Records regarding transfer of credits.

Accreditation of Forestry Programs

The recreation, parks, and tourism resources program is accredited by the National Recreation and Park Association as a professional preparation program with two emphases: leisure services delivery and natural resources recreation.

Forest resources management is accredited by the Society of American Foresters (SAF). SAF is the specialized accrediting body recognized by the Council on Post-Secondary Accreditation and the U. S. Department of Education as the accrediting agency for forestry in the United States.

The wood industries curriculum is accredited by the Society of Wood Science and Technology. It is one of only nine North American programs so accredited.

Summer Field Studies in the Division of Forestry

The six-hour *Forest Resources Management Field Practice* (FMAN 400) course consists of a summer session and is designed for students who have completed the sophomore year of the forest resources management curriculum. Students live in Morgantown and travel daily to the University Forest for field studies. The course provides training in forest surveying, timber estimating, photo interpretation, forest management, and forest recreation. Occasional trips are made to wood-using industries and to other forests to study the management of northern hardwood and spruce types.

The instructional program in the four-hour *Wood Industry Field Practice* (WDSC 400 and 401) course consists of a three-week field course in wood processing, industrial safety, and forest measurement, and a one-week trip to Virginia and North Carolina to observe various commercial wood-using industries. These industries include lumber, plywood, veneer, particle board, furniture, glue lamination, and preservation. The RPTR 488 *Internship* is required of students who have completed the junior year of the recreation resources management curriculum. Eight weeks of full-time supervised professional field work is required of students who have completed the junior year of the recreation curriculum. The summer experiences acquaint students with management of park, recreation, and tourism enterprises.

The program also offers a series of summer field-based courses and international travel experiences. See www.forestry.caf.wvu.edu for details.

Forest Resources Management Curriculum

Bachelor of Science in Forestry

This curriculum is designed to prepare graduates for a career in management of forests and associated resources. In forestry, we face growing demands for wood products, along with increasing public consciousness of the value of wildlands for recreation, wildlife habitat, watershed protection, aesthetics, and environmental protection. Our curriculum is designed to provide a balanced approach to forest management. The major emphasis is on management and utilization of timber resources, but we also orient students to management of forests for recreation, wildlife, and water. We also stress the importance of forest ecology, environmental protection, and aesthetic qualities in forest management.

Curriculum Structure

We require the completion of 138 credit hours of coursework. Required courses include biological, physical, and social sciences, English composition, communication, mathematics, forest science and management, and liberal studies. We require a six-week summer field practice; this period, along with laboratories in several of our courses, provides ample opportunity to gain field experience. Overall, we have designed the curriculum to provide the needed blend of scientific, technical, and managerial knowledge professionals need to manage public or private forest resources. Elective hours can be used to develop additional professional competence in specialized areas.

Curriculum Requirements	Hrs.
Freshman Year	
FOR 101 *Careers in Natural Resources Management*	1
BIOL 101 and 103 *General Biology*	4
CHEM 111 and 112 *Survey of Chemistry* (or equivalent)	8
ENGL 101 *Composition and Rhetoric*	3
MATH 155 or 150 *Calculus or Introduction to Calculus*	3
PLSC 206 *Principles of Plant Science*	4
RPTR elective (see advisor for approved list)	3
Sophomore Year	
FOR 205 *Dendrology*	3
FMAN 212 *Forest Ecology*	3
FMAN 222 *Forest Mensuration*	4
FMAN 400 *Forest Resources Management Field Practice**	6
CE 200 *Land Surveying*	4
CS 110 *Introduction to Computer Science*	4
ECON 201 *Principles of Economics*	3
ENGL 102 *Composition and Rhetoric*	3
STAT 211 *Elementary Statistical Inference*	3
WMAN 234 *Forest Wildlife Management*	3
Junior Year	
FOR 326 *Remote Sensing of Environment*	2
FMAN 251 *Forest Fire Protection*	2
FMAN 311 *Silvicultural Systems*	4
FMAN 330 *Principles of Forestry Economics*	4
AGEE 421 *Agricultural/Natural Resource Communications*	3
AGRN 202 and 203 *Principles of Soil Science*	4
ECON 202 *Principles of Economics*	3
ENGL 202 *or* 305 *Business Professional Writing or Scientific and Technical Writing*	3
WDSC 223 *Wood Anatomy and Structure*	3
WDSC 232 *Primary Conversion and Grading*	3
Senior Year	
FOR 420 *Forest Policy and Administration*	3
FHYD 444 *Watershed Management*	3
FMAN 433 *Forest Management*	3
FMAN 434 *Forest Resources Management Planning*	3
ENTO 470 *or* PPTH 470 *Forest Pest Management*	4
Additional LSP requirements, not elsewhere covered	18
Electives	11
Total	**138**

*Summer field practice course.

Career Opportunities

Our graduates find a variety of career opportunities. Many are professional foresters with governmental agencies, such as the U.S.D.A. Forest Service and state forestry services, and many others are employed by private wood industries such as lumber and wood products companies and pulp and paper companies. Some of our graduates work in private forestry consulting or have established their own businesses. A significant number of our students go on to graduate school, studying a wide range of scientific and technical specializations to prepare them for research, teaching, or advanced managerial careers.

As a graduate professional forester, you could expect to do field work such as estimating the volume and value of areas of timberland, planning and supervising timber harvesting operations, and doing forest protection work including fire, insect, and disease control. Managerial work would include such things as planning timber crop rotations, evaluating the economics of alternative forest management plans, and planning for integration of forest land for recreation, timber, watershed, wildlife, and environmental protection. With experience and proven performance in these activities, professional foresters often advance to executive management positions in public forestry agencies or forest products industries.

Recreation, Parks, and Tourism Resources Curriculum

Bachelor of Science in Recreation

The recreation, parks, and tourism resources curriculum is designed to prepare students for a career providing recreation and tourism opportunities in the public sector or with private or commercial enterprises. The program requires 136 hours. A basic core of recreation and tourism courses is complemented by additional recreation emphasis courses and by appropriate courses within the college or University.

A booklet explaining the current list of required and elective courses is available from the Recreation, Parks, and Tourism Resources Office, Division of Forestry, 325 Percival Hall, P.O. Box 6125, West Virginia University, Morgantown, WV 26506-6125, or at the program's web site at www.forestry.caf.wvu.edu/recreation.html.

In the freshman year, you may enroll in RPTR 142 *Introduction to Recreation,* MATH 124 or 126 or equivalent, CS 110 or equivalent, or STAT 211 or equivalent. RPTR 142 and 145 will be required prerequisites before upper-division recreation and park courses may be taken for credit. At the end of the junior year, after completing RPTR 142, 145, 263, 251, 335, 336, and any other courses necessary for the particular assignment, you must complete an approved 400-hour internship of not less than eight weeks with a recreation, parks, and tourism agency (RPTR 491). The experience of the internship will be analyzed and discussed in RPTR 485. Most recreation internships occur during the summer months.

Curriculum Requirements	**Hrs.**
ENGL 101 and 102 *Composition and Rhetoric*	6
HIST 101 *or* 102, HIST 152 *or* 153	6
MATH 124, 126, CS 110	10
PSYC 101 *Introduction to Psychology*	3
SOCA 101 *or* SOCA 105	3
ECON 201	3
Natural Science (meeting LSP requirement, usually BIOL 110 and 103)	4
Recreation, Parks, and Tourism Resources courses:	
RPTR 142, 145, 251, 263, 335, 365, 433, 439, 450, 485, 491	36
Restricted electives (from among FOR, BUSA, and others)	45
Free electives and additional LSP requirements	20
Total	**136**

Professional Preparation and Areas of Emphasis

The professional preparation program allows for two areas of emphasis: natural resource recreation or leisure service delivery. Each emphasis develops from a core of recreation classes that establishes a basic professional proficiency. Additional competencies may be developed through the careful selection of electives. Placements with local recreation agencies contribute to the development of professional competencies, and the choice of an internship after the junior year provides extensive experience in the delivery of services and the management of recreation resources.

Natural Resources Recreation This emphasis focuses on outdoor recreation in natural settings. In addition to recreation classes, students complete coursework in natural resources (forestry, wildlife, and environmental issues), behavioral sciences, political science, economics, and management. Although primary attention is placed on

recreation in natural settings, you may develop a specialty in applied outdoor recreation management, interpretation of natural and historical areas, or natural resources-related tourism.

Leisure Services Delivery This emphasis prepares you for general entry into the recreation, parks, and tourism resources career field. Coursework enables you to qualify for positions of increasing operational, supervisory, administrative, and managerial responsibility. This emphasis may also prepare you for the delivery of recreation and leisure services in a wide range of settings, including commercial enterprises and municipal, county, state, and national parks. In addition to the core of recreation classes, additional class work in business administration, political science, and the behavioral sciences may be appropriate.

Wildlife and Fisheries Resources Curriculum
Bachelor of Science

The wildlife and fisheries resources curriculum, consisting of 136 hours, is designed to prepare students for professional positions as wildlife and fish biologists, conservation officers, wildlife and fisheries managers and planners, wildlife or fisheries communication specialists, wildlife and fisheries toxicologists, and environmental consultants. The curriculum provides a solid basic background in biology, ecology, and natural resource management. A careful selection of restricted and free electives enables students to specialize in related natural resource areas and to have the opportunity for widening employment in other environmental fields. Graduates from our program meet the certification requirements for wildlife biologists from the Wildlife Society.

The curriculum offers two options: wildlife and fisheries science oriented toward research (for those considering graduate school); wildlife and fisheries management directed toward management-oriented careers. Other options can be tailored to your objectives. Students will be able to consult with their advisor in the selection of courses from a group of restricted electives to develop your area of emphasis.

Curriculum Requirements (Both Options)	**Hrs.**
WMAN 150 *Conservation Biology*	3
WMAN 175 *Science and Management of Natural Resources*	3
WMAN 224 *Vertebrate Natural History*	3
WMAN 234 *Forest Wildlife Management*	3
WMAN 313 *Ecosystem Ecology*	4
WMAN 394 *Internship Experience*	1
WMAN 428 *Wildlife/Fisheries Policy and Administration*	3
WMAN 431 *Wildlife Techniques*	4
WMAN 445 *Introduction to Fish Management*	3
WMAN 446 *Forest Limnology*	4
WMAN 449 *Fisheries Techniques*	3
A Fisheries Course (BIO 341 or 339, WMAN 550)	3
FOR 205 *Dendrology*	3
FMAN 311 *Silviculture*	4
ENGL 101 and 102 *Composition and Rhetoric*	6
CS 110 *Introduction to Computer Science*	4
AGRN 202/203	4
Oral Communication	3
STAT 211 *or* equivalent	3
ANPH 310 *Animal Physiology*	3
Plant (botany) Course	3
MATH 124 *College Algebra*	3
Science Option curriculum (see below) *or*	31
Management Option curriculum (see below)	
LSP Electives*	24
Free Electives	8
Total	**136**

Science Option

MATH 150 Intro to Calculus	3
BIOL 115 Principles of Biology	4
BIOL 117 Intro Physiology	4
CHEM 115 and 116 *Fundamentals of Chemistry*	8
Restricted Electives	12

Management Option

BIOL 101/103 and 102/104 *General Biology*	8
CHEM 111 and 112 *Survey of Chemistry*	8
Restricted Electives	15

* Courses in the Cluster A and B must involve at least three different disciples. At least two courses must be from the same discipline for Cluster A and for Cluster B. Three hours of Cluster A or B must focus on foreign or minority culture.

When you attend WVU in the Wildlife and Fisheries Resources Program, you will have some special opportunities to enhance your education. We have a U.S.G.S. Fish and Wildlife Cooperative Research Unit housed within our program. This unit provides three additional faculty members conducting extensive research programs all around the country. In addition, the WVDNR provides a liaison biologist to the unit that provides a direct link from students to the State's natural resources agency. Undergraduates benefit from the personnel at the unit in several ways: the unit and liaison provide federal and state contacts for employment opportunities; the unit research programs may provide summer employment on fish and wildlife projects, and faculty in the unit also teach in our program.

All of our faculty are involved with graduate training. This active research program provides invaluable classroom experiences as faculty remain up-to-date with all the latest studies and methods in the field. Students also benefit through volunteer experiences and summer employment opportunities for students working on research projects.

Career opportunities in wildlife and fisheries are expanding. Even so, we encourage our students to consider going for advanced degrees when they finish here. Such qualified seniors find that assistantships are readily available due to the solid course background, training, and experience they received while here at WVU.

Minor in Wildlife and Fisheries Resources

In order to earn a formal minor, students must complete the following courses: WMAN 150, 224, 234, 313, 431, and 445.

Wood Industries Curriculum

Bachelor of Science in Forestry

The wood industries curriculum is designed to prepare students to meet the challenges of a career in the wood products industry. Society must provide the basic needs for materials for building materials, furniture, paper, packaging, and other products for sustaining a rapidly growing population. One of the most sensible alternatives for meeting material needs in an environmentally safe manner is by use of wood as a raw material. To meet society's needs, the wood products industry must harvest timber in an environmentally sound manner and must make more efficient use of the harvested forest resource. This responsibility requires development of innovative approaches to obtaining, manufacturing, using, and recycling wood products. The wood industries curriculum focuses on these aspects of the wood products industry.

Areas of Emphasis

There are two options within the wood industries curriculum that you may choose from: wood processing and forest utilization. The wood processing option prepares graduates for careers in the production of wood products, including primary products, architectural woodwork, furniture and cabinets, and composite materials. The forest utilization option prepares graduates for careers in timber harvesting, forest engineering, primary processing of wood products, and timber procurement.

Curriculum Requirements (Both Options)	Hrs.
ENGL 101 *Composition and Rhetoric*	3
ENGL 102 *Composition and Rhetoric*	3
ENGL 305 *Scientific and Technical Writing*	3
MATH 155 *Calculus*	4
BIOL Elective	4
FOR 101 *Professional Orientation*	1
FOR 205 *Dendrology*	3
CHEM 111 *or* 115 *Chemistry**	4
CHEM 112 *or* 116 *Chemistry**	4
IMSE 377 *Engineering Economy*	3
PHYS 101 *Introductory Physics*	4
AGEE 110 *or* CS 110 *Computer Science*	3 or 4
STAT 211 *Elementary Statistical Inference*	3
FMAN 222 *Forest Mensuration*	4
ECON 201 *Principles of Economics*	3
ECON 202 *Principles of Economics*	3
Oral Communications Elective**	3
LSP Cluster A***	12
LSP Cluster B***	6
WDSC 223 *Wood Anatomy and Structure*	3
WDSC 232 *Primary Conversion and Grading*	3
WDSC 494 *Seminar*	2
WDSC 401 *Wood Industries Field Trip*	1
WDSC 340 *Physical Behavior of Wood*	3
WDSC 341 *Wood Mechanics*	3
WDSC 362 *Forest Products Decision-Making*	4
WDSC 465 *Wood-Based Composite Materials*	3
Total Option requirements and electives	**42**
Total	**95 or 96**

*See advisor before choosing chemistry courses.
**May also count as an LSP requirement.
*** May include communications elective.

Wood Industries Requirements

Forest Utilization Option	Hrs.
CE 200 *Land Surveying*	4
FHYD 444 *Forest Hydrology*	3
FMAN 212 *Forest Ecology*	3
FMAN 311 *Silvicultural Systems*	4
FMAN 433 *Forest Management*	3
FOR 326 *Remote Sensing of Environment*	2
RPTR 433, 439, or 442 *Recreation, Parks, and Tourism*	3
WDSC 491 *Professional Field Experience or* WDSC 400 *Forest Measurement Field Practice*	3
WDSC 422 *Harvesting Forest Products*	3
WDSC 423 *Forest Roads*	4
WMAN 234 *Forest Wildlife Management*	3
Restricted Electives*	7-8
Total	**42 or 43**

*To complete a total of 138 credit hours of required and restricted elective courses. Requires advisor approval.

Wood Processing Option

AGEE 220 *or* BUSA 320 *Management*	3
ARE 431 *or* BUSA 330 *Marketing*	3
ARE 461 *or* BUSA 340 *Finance*	3
WDSC 491 *Professional Field Experience*	3
WDSC 330 *Wood Machining*	3
WDSC 337 *Wood Adhesion and Finishing*	3
WDSC 351 *Forest Products Protection*	3
WDSC 460 *Plant Layout for Wood Industries*	3
Restricted Electives*	18-19
Total	**42 or 43**

*To complete a total of 138 credit hours of required and restricted elective courses. Requires advisor approval.

Special Opportunities

A regional center for development of the wood products industry, the Appalachian Hardwood Center, is allied with the wood industries program. The staff of the center frequently provides opportunities for educational and professional development of wood industries students.

Career Prospects

Job opportunities for wood industries graduates are outstanding. Nearly all seniors who seek employment after graduation find jobs in the wood products industry. Salaries are generally competitive with other technical disciplines, and opportunities for career advancement are excellent. In addition, some wood industries graduates choose to continue their education by pursuing master's and doctoral degrees in this or a related field. Graduates are employed in all areas of the wood products industry in a wide variety of production management, marketing, and technical careers. They can be found in all regions of the United States. Many of the leaders in the nation's wood products industry are WVU graduates.

Minor in Wood Industries

Requirements include18 credit hours, including WDSC 223, 340 and 341 (9 hours); and a minimum of nine hours selected from 413, 422, 423, 330, 337, 351, 362, 465.

Division of Plant and Soil Sciences

Barton S. Baker, Ph.D., Director

Nature of Program, Objectives, and Goals

Students in the Division of Plant and Soil Sciences may choose from agronomy (crop science and soil science), basic sciences, horticulture, or environmental protection majors. Graduates from this curriculum are employed in commercial industries involved with the production and distribution of pesticides, fertilizers, seeds and plants, and nursery, floral, and turf products. Positions as estate and farm managers, land reclamationists, city and county planning technicians, park and golf course superintendents, and environmental protectionists are also available to graduates. A variety of state and federal governmental and private consulting positions are available as well. Graduates who wish to further their education may acquire the necessary backgrounds to enter professional or graduate programs in such fields as agricultural biochemistry, crop science, entomology, genetics, horticulture, microbiology, mycology, plant pathology, plant physiology, and soil science.

Bachelor of Science in Agriculture

Curriculum Requirements: Plant and Soil Sciences **Hrs.**

English Composition and Rhetoric (or conformity with University English requirements) 6
Arts and Humanities (Cluster A) 12
Social and Behavioral Sciences (Cluster B) 12
Natural Sciences (Cluster C included) 24
(must elect a minimum of eight hours in biology; eight hours in chemistry; three hours in college algebra or equivalent)
Courses in Agriculture 45
Elect a minimum of a three-credit course, excluding *Assigned Topics*, from each of the following disciplines:
1. Animal science
2. Plant science
3. Soil science
4. Agricultural/resource economics

Elect additional courses to obtain a total of 45 hours in agriculture.
Free and Restricted Electives 37
Total **136**

The specific requirements for each of the program options are listed under the description of that option.

Agronomy

Agronomy is the application of sciences to the production of field crops and the management of soils. Agronomists are concerned with producing food and with protecting soil and water resources. The crop science option in agronomy emphasizes primarily the physiology, production, and quality of forage crops. The soil science option in agronomy emphasizes the characteristics and management of soils for growing plants, construction sites, wastewater treatment, and surface mine reclamation. Agronomists qualify for a wide variety of occupations, including farming, soil conservation, soil survey, agricultural sales, extension, research, and turfgrass management.

Required Courses BIOL 350, ENGL 305, ENVM 241, MATH 128 or equivalent, PHYS 101, STAT 211, three hours in computer science, three hours in communication studies or speech pathology and audiology, one semester of organic chemistry including laboratory.

Additional Requirements for Crop Science ENTO 404, GEN 371, PPTH 401, six hours in ECON or ARE, 15 hours in crop science, six hours in soil science.

Additional Requirements for Soil Science GEOL 101 and 102, three hours in engineering, six hours in crop science, 15 hours in soil science.

Basic Sciences

This option is especially designed for students who are interested in continuing their education beyond the undergraduate level. Students enrolled in this option develop a strong background in the basic sciences, which permits graduate studies in a number of fields.

Required Courses AGBI 410; ENVM 241; BIOL 350; CHEM 233, 234, 235, 236; ECON 201; MATH 126, 128, 155, 156; PHYS 101, 102; STAT 211.

Environmental Protection

This option prepares students for careers in areas which safeguard the quality of the environment. The curriculum consists of two elements: interdisciplinary training in a broad array of environmental protection sciences, and a specialization in either pest management or soil and water conservation. Students work with their advisor to select courses from both the environmental protection electives and the specialization electives that match their individual interests and career goals. Recent graduates in this option are employed by municipal, state, and federal governmental agencies; consulting firms, especially those specializing in land reclamation, water quality, or pest management; and companies associated with natural resource industries.

Natural Science Requirements (30 hours) BIOL 101, 102, 103, 104; CHEM 115, 116, 231; MATH 126; STAT 211; GEOL 101, 102 or 110, 111*.

Required College Courses (24-25 hours) ARE Course; AGRN 202, 203; Animal Science course (3-4 hours); ENVM 241; ENVP 155, 460; PLSC 206.

Environmental Protection Electives (13 hours from at least two areas) AGBI 410; ARE 220, 383, 410; BIOL 361; CE 443; CS 101*; or AGEE 110; ENGL 305; ENGR 493B; ENVP 355; FOR 210, 326; GEN 371; GEOG, 205, 305, 230; PHYS 101, 102; POLS 355.

Specializations (20 hours including the capstone course from one of the following)

Pest Management ENVP/ENTO 412; AGRN 315, 451; BIOL 221; ENTO/PPTH 470; ENTO 301, 404, 410; ENVM 401; PPTH 401.

Soil and Water Conservation ENVP/AGRN 455; AGEE 460, 461; AGRN 410, 415, 417, 430, 451, 454, 455, 463; CE 347, 441; ENVM 401; ENVM/AGRN 420; FHYD 444; FMAN 251; GEOL 365, 321, 463; WMAN, 350.

*__Note:__ The B.S. in agriculture requires 45 hours in agriculture courses. The total hours may be met by taking the required college courses and by taking college courses offered under environmental protection electives, free electives, or one of the specializations. STAT 211; GEOL 101 and 102, or 110 and 111; and CS 101 are accepted as part of the required 45 hours in agriculture courses.

Horticulture

Horticulture is the science of production, processing, and marketing of fruit, vegetable, greenhouse, and landscape crops. Students in the horticulture option study the physiology, culture, harvesting, quality control, sales, and utilization of horticultural crops. Horticulture prepares students for careers such as orchard, vegetable farm, or greenhouse managers, landscape contractors, golf course and park horticulturists, seed and supply company representatives, state and federal nursery inspectors, and educators in schools and extension. Required courses: ARE 150 or ECON 201; AGRN 202, 203; BIOL 101, 102, 103, 104, 250; CHEM 231 or 233 and 235; CS 101; ENTO 420; HORT 220, 420, and six hours additional horticulture; PPTH 401.

Environmental Protection
Bachelor of Science

The bachelor of science degree with a major in environmental protection prepares students for advanced study in safeguarding the quality of the environment. The curriculum offers broad interdisciplinary training in the environmental sciences and a rigorous background preparation for graduate study in these fields. Students select a specialization in either plant protection or soil and water protection. Students work with their advisor to select courses from the specialization electives that match their individual interests and career goals.

ENGL 101, 102 (6 hours), Cluster A (12 hours), Cluster B (12 hours, including ECON 201), Cluster C (requirements described below)

Environmental Protection (69-71 hours) AGRN 202, 203; ARE 220 or 382; BIOL 115; CHEM 115, 116, 233, 234, 235, 236; CS 101 or AGEE 110; ENGL 305; ENVM 241; ENVP 155, 460; GEN 371; GEOL 101, 102, or 110, 111; MATH 155 or 150; PLSC 206; PHYS 101, 102; STAT 211 or 215.

Specializations (26 hours from one of the following)

Plant Protection AGBI 410; AGEE 421; AGRN 315, 410, 451, 454; A&VS 402; BIOL 350, 352, 361; CHEM 215; ENTO/PPTH 470; ENTO 301, 404, 410; ENTO/ENVP 412; ENVM 401; ENVP 355; FOR 210; PPTH 401.

Soil and Water Protection AGBI 410; AGEE 421, 460, 461; AGRN 410, 415, 417, AGRN/ENVP 425; AGRN 430, 451, 454, 455; A&VS 402, 463; CE 347, 441, 441; CHEM 215; ENVM 401; ENVM/AGRN 420; ENVP 355; FOR 210, 326; GEOL 201, 321, 463.

Free Electives (5-7 hours).
Total: 132 hours.

Minor in Environmental Microbiology

The minor in environmental microbiology is designed to introduce students to the beneficial and harmful roles of microorganisms in a variety of diverse environments including plants, animals, soil, food, air, and water. Emphasis is given to the importance of microorganisms in such applied areas as public health, plant disease, pollution and pollution abatement, biological control of pests, biodeterioration, and ecology.

Total number of required hours: 15 hours with a minimum letter grade of C in each course and a cumulative GPA of at least 2.5. Required courses: ENVM 341 *General Microbiology* (4 hr.), and PPTH 401 *General Plant Pathology* (4 hr.).

Minimum of seven hours selected from the following: ENVM 401 *Environmental Microbiology* (4 hr.) ENVM 420 *Soil Microbiology* (3 hr.), ENVN 49 *Special Topics in Environmental Microbiology* (*1-4 hr.), PPTH 470 *Forest Pest Management* (3 hr.), PPTH 493 *Special Topics in Plant Pathology* (*1-4 hr.), PPTH 503 *Mycology* (4-hr.), PPTH 509 *Nematology* (3 hr.).

*Maximum of four hours of special topics courses (ENVM 493 or PPTH 493) can be applied toward the 15 hour total and requires approval of the division director.

Division of Resource Management

Peter V. Schaeffer, Ph.D., Director

Programs

The Division of Resource Management offers curricula in agricultural and environmental education, landscape architecture, and agricultural and resource economics. The curriculum in agricultural and resource economics allows emphasis in environmental and resource economics, or agribusiness management and rural development. Students are prepared to pursue graduate studies or work in agriculture, business, industry, government, finance, and related areas or to pursue graduate studies. The curriculum in agricultural and environmental education prepares students to teach agriculture in secondary schools, enter the extension service, or accept professional employment in government, industry, or entrepreneurship. An agricultural and environmental education major can also elect to specialize in environmental technology with employment opportunities available in related activities after graduation. The landscape architecture curriculum prepares students for professional careers with private firms and government agencies.

Agribusiness Management and Rural Development
Bachelor of Science

This major is ideally suited to prepare students to pursue careers in a state such as West Virginia where rural areas and small businesses are predominant. The goal of this major is to provide students with a breadth of knowledge in the social and agricultural sciences. Upon graduation, students will be prepared for employment in the private and public sectors of agriculture and rural development. Students can expect to find employment in agribusiness or farm management, rural economic development agencies, financial institutions, or state and federal government agencies dealing with agriculture or natural resource management. Employment in these areas requires the essential components of this major: a broad educational background combined with a knowledge of agricultural and rural economies. This major also provides students with the flexibility to pursue coursework in preparation for graduate school.

Course Requirements	Hrs.
English Composition and Rhetoric	6
Liberal Studies	
Cluster A	12
Cluster B	12
Cluster C	12
Required Courses	34
ARE 110, 150, 204, 401, 411, 431, 461, 494	
AGEE 110; ECON 201 and 202; and ECON 225 *or* STAT 211	
Restricted Electives	30
(Selected and approved in consultation with advisor; must include at least four courses from the college.)	
Free Electives	22
Total	**128**

Minor in Agribusiness Management

Principles pertaining to agribusiness management requires 15 credit hours including: ARE 110, 204, 431, and 461. The remaining three credit hours must be chosen from: ARE 406, 420, 435 *or* 440.

Agricultural and Environmental Education

Bachelor of Science in Agriculture

The agricultural and environmental education curriculum is designed to prepare students for entry into agricultural teaching, extension, and environmental technology positions or other professional employment in government, industry, or entrepreneurship where competence in communications and leadership are required. The curriculum provides flexibility to develop programs in options emphasizing teacher preparation, environmental technology, or communications and leadership. Courses are selected by the student, in consultation with an advisor, that will prepare the student to achieve his or her aspirations.

Curriculum Requirements	Hrs.
English Composition and Rhetoric	6
(or conformity with University English requirements.)	
Fine Arts and Humanities (Cluster A)	12
Social and Behavioral Sciences (Cluster B)	12
Natural Sciences and Mathematics (Cluster C)	12
(Must elect four hours in biology; four hours in chemistry; three hours in college algebra or equivalent.)	
Courses in the college	45
Must include a minimum of a three-credit course, excluding *Assigned Topics*, in each of the following: Animal Science, Plant Science, Soil Science, Agricultural Economics, and Forest Management.	
Restricted Science Electives	6
(To be selected from Statistics, Computer Science, Geology, Mathematics, Physics, Physical Science, Biology, or Chemistry.)	
Option Requirements and Electives	43
Total	**136**

Agriculture Teacher Education

An effective agriculture teacher can assist in the economic and social development of a community. Middle school, high school, and adult classes strengthened by supervised agricultural experience programs are the methods whereby the agriculture teacher helps students become involved and established in production agriculture and off-farm occupations which require agricultural knowledge and skills.

Students completing this program will meet requirements for certification by the West Virginia Department of Education. The program provides graduates with the opportunity to become qualified to teach in the broad field of agriculture as well as to become prepared to teach in specialty areas such as production, processing, conservation and forestry, and horticulture. In addition to teaching, graduates often take employment with governmental agencies and in private enterprise.

To be eligible for student teaching and subsequent certification to teach, the student must: possess a 2.5 grade point average on the total of all college credits, including hours earned in professional education and in technical agriculture courses; pass competency tests in reading, writing, mathematics, and agriculture, and the Principles of Learning and Teaching (Praxis) test for grades 7-12; and complete the required agriculture and professional education courses.

Agricultural and Environmental Technology

This option offers broad training in agricultural and environmental technology as well as specialized instruction in areas of solid waste management, composting science, surface water control and sediment management, turf irrigation, and agricultural power. Employment opportunities exist with federal, state, county, and municipal agencies and private companies where knowledge of technology related to the environment is required. Examples include waste-facility managers, recycling coordinators, soil conservation and water quality specialists, and environmental officers.

Agricultural Communications and Leadership

This option emphasizes human resources management and the development of leadership capabilities. Persons who wish to work for the Extension Service as agricultural or 4-H agents, or to be employed in government, business, or industry where agricultural and environmental training coupled with communications and leadership skills is valuable, may find this option to be of interest. Programs can be developed to include broad or specific training in various areas of agriculture, environmental technology, and community or international development.

Agricultural courses required of all agricultural and environmental education majors: AGEE 110, 220, 250, 421, 454 *Practica*, 494 *Reflective Learning*, AGRN 202, 203, ARE 204, A&VS 251, PLSC 206.

Agricultural courses recommended for all agricultural and environmental education majors: AGEE 101, 460, ARE 150, FMAN 332, HORT 220, 445.

Courses required in the agricultural teacher education option: AGEE 430, 488, 493 *Colloquium*, 493 *Tutoring*, 493 *Learning Environment*, AGEE 493 *FFA*, PSYC 101, 241.

Courses required in the agricultural and environmental technology option: AGEE 454 *Problems*, 454 *Water*, 460, 461, 491, ARE 220, ENVP 155.

Courses required in the agricultural communications and leadership option: AGEE 431, 440, 491, 493 *Colloquium*, JRL 101, PSYC 101, 241.

Environmental and Natural Resource Economics
Bachelor of Science

The objective of this major is to provide students with the training necessary for the application of economic theory and analysis to environmental and natural resource policy. The flexibility of this major allows students, in consultation with their academic advisor, to design a program of study which focuses on environmental and natural resource issues tailored to individual interests (such as water use and quality, soil protection, waste management, or ecosystem management and land use). The curriculum reflects the breadth of training required to prepare students for careers in the private and government sectors dealing with environmental and natural resource management and policy analysis.

Students in this major can expect to find employment with state and federal government agencies or with private industry in environmental policy analysis and management of natural resources. Many students may find it desirable to obtain a graduate degree. Students completing this degree will be prepared for graduate study in environmental and natural resource economics and policy.

Course Requirements	Hrs.
English Composition and Rhetoric	6
Liberal Studies	
Cluster A	12
Cluster B (must include ECON 201 and 202)	15
Cluster C	20
(Must include a course in calculus, and statistics, and two four-credit courses, each with a laboratory.)	
Major Courses	19
ARE 220, 382, 401, 410, 450, 494, AGEE 110	
Restricted Electives	30
(Selected and approved in consultation with advisor; must include at least four courses from the college with at least one course in agronomy and one in plant sciences.)	
Free Electives	26
Total	**128**

Minor in Environmental Economics

Fifteen credit hours and a GPA of at least 2.0 will be counted toward the minor. Students must select 15 credit hours of courses with an environment component: one course on environmental problems or issues (3 hr.); three courses in environmental and resource economics (9 hr.); and one course on law, policy, or analysis (3 hr.). Eligible courses include: environmental problems or issues (ARE 187, ENVP 155, or FOR 140); environmental and resource economics (ARE 220, 401, and 410); and law, policy, or analysis (ARE 382, ARE 450, or RESM 493).

Landscape Architecture Curriculum

Bachelor of Science in Landscape Architecture

Landscape architecture is the art of design, planning, and arranging natural and man-made elements on the land. It applies cultural and scientific knowledge with concern for the conservation and stewardship of natural and aesthetic amenities to create an environment that serves a useful and enjoyable purpose. This involves consideration of the quality of life in urban and natural settings, as well as the interaction of humans with nature. The landscape architecture program at West Virginia University strives to equip students with techniques and skills through problem-solving in design theory, site construction, land use planning, and planting design. It emphasizes a philosophy of responsibility and commitment to ethical standards regarding the natural environment, personal relationships, and professional practice.

The faculty represents a multi-disciplinary team with practical experience in creative and scientific research, design, consultation, and public service. This diversity is the nucleus of the program, allowing for a strong undergraduate curriculum supplemented by related courses in the arts, sciences, engineering, and planning, reflecting the needs of the Appalachian region and current trends within the profession.

Graduates of the program can assume traditional landscape architectural roles, e.g., positions with design consulting firms, governmental planning departments, construction firms, transportation planning agencies, etc. In addition, WVU graduates are prepared for design and planning positions meeting the needs common to West Virginia and other rural areas.

The landscape architecture program is fully accredited by the Landscape Architecture Accreditation Board of the American Society of Landscape Architects.

Curriculum Requirements	**Hrs.**
English Composition and Rhetoric	6
(Or conformity with University English requirements.)	
Arts and Humanities (Cluster A)	12
Social and Behavioral Sciences (Cluster B)	12
Natural Sciences (Cluster C) Including Math 128	12
CE 200	4
Courses in Landscape Architecture*	63
MATH 126 (LSP required math course)	3
Studio Art Courses	6
Electives	18
Total	**136**

*In addition, each student will be required to work for at least one summer in an approved landscape architecture office or equivalent.

To be eligible to advance in proper sequence in landscape architecture, a student must attain a C grade or better for each of the following courses: LARC 120, 121, 212, 223, 231, 250, 251, 260, 261, 330, 331, 350, 351, 360, 450, 451, 465, 466, 484. Timely completion of MATH 126 and 128 and of CE 200 are also critical for advancement in the program of study.

Of the 62 hours required for a bachelor of science in landscape architecture, the following courses, or their equivalent, are required: LARC 120, 121, 212, 223, 231, 250, 251, 260, 261, 330, 331, 350, 351, 360, 450, 451, 465/466, and 484.

A portfolio review by the faculty will be required for all students at the end of the second year of the curriculum. Projects will be submitted by the student for formal review by the entire landscape architecture faculty. If the work is unsatisfactory, the student will not be allowed to proceed to the next level of coursework until his or her work meets satisfactory standards.

Eberly College of Arts and Sciences

M. Duane Nellis, Ph.D., Dean
Joan S. Gorham, Ed.D., Associate Dean, Academic Affairs
Rudolph P. Almasy, Ph.D., Associate Dean, Development
Nicholas G. Evans, Ed.D., Associate Dean, Undergraduate Education
Fred L. King, Ph.D., Associate Dean, Research and Graduate Studies
Asuntina S. Levelle, J.D., Assistant Dean, Financial Planning and Management
A. Mark Dalessandro, M.A., College Communications Director
Bonnie McBee Fisher, M.A., Associate Director of Development
Thomas J. Moran, M.S., Program Coordinator, Information Technology
www.as.wvu.edu

Degrees Offered

Bachelor of Arts Majors

Biology
Chemistry
Communication Studies
Economics
English
Environmental Geoscience
Foreign Languages
Geography
History
Interdepartmental Studies
Mathematics
Philosophy
Physics
Political Science
Psychology
Sociology and Anthropology

Bachelor of Science Majors

Biology
Chemistry
Computer Science
Geology
Forensic Identification
Interdepartmental Studies
Mathematics
Physics
Psychology
Social Work

Regents Bachelor of Arts

The interdepartmental studies major involves concentrated study in more than one department of the University. These curricula include the individualized major, the specially designated area major, and the liberal arts and sciences major. The specially designated area programs are:

Biochemistry
Industrial Mathematics and Statistics
International Studies
Slavic Studies
Social Studies

The alphabetical listing of programs contains additional information about degree programs and interdepartmental major programs.

History of the College

Starting with the initial charter of WVU by the Legislature in 1867, the liberal arts and the sciences were an important and central element of the University. The College of Arts and Sciences was formally created in 1895, and eleven students received degrees from the college in 1896. In the 1911-12 academic year, the West Virginia Chapter of Phi Beta Kappa was established within the College of Arts and Sciences.

On July 1, 1993, the name of the college was changed to Eberly College of Arts and Sciences to recognize and commemorate the generosity of the Eberly family, the Eberly Foundation, and the Eberly Family Charitable Trust.

Today, the Eberly College of Arts and Sciences awards degrees to over 1,000 students every year. It remains the heart of West Virginia University, providing students with a liberal education in the areas of literature and the humanities, mathematics and

natural sciences, and social and behavioral sciences. In addition to teaching, the college's 300 faculty members are actively engaged in research and scholarship, publishing approximately 300 articles and 25 books each year.

Mission

The primary mission of the Eberly College of Arts and Sciences is to promote the full development of the student as an individual and as a member of society. Students earning degrees in Arts and Sciences fulfill certain broad basic-education requirements and study at least one subject in some depth. The degree requirements are intended to carry forward what is usually termed "a general education," thus providing a foundation for continued growth and development after graduation.

Clearly, one purpose of a college education is to help students acquire knowledge and skills both for self-fulfillment and in preparation for the roles they will subsequently play in society. A less obvious but equally important purpose is to impart certain attitudes to students. In the interest of fulfilling both purposes, the Eberly College of Arts and Sciences strives to help students acquire the specific attributes listed below.

Knowledge

- A knowledge of the main principles, facts, concepts, and theories in a major area of concentration.
- A knowledge of Western and non-Western civilizations: their distinctive characters (belief systems, languages, intellectual, and artistic contributions), and their origins, development, and present states.
- A knowledge and appreciation of the environment in which one operates (physical, biotic, social, technological, aesthetic), including knowledge of change processes (evolutionary, technological, social, intellectual) and knowledge of past adaptations as a basis for predicting the consequences of contemporary actions and changes.
- A knowledge and appreciation of the arts, of their humanizing and energizing effects, and of one's connection with the arts through one's impulses toward creativity.
- A familiarity with the various technical languages (statistics, linguistics, etc.) that are increasingly necessary to understand the major approaches in the sciences and humanities.

Skills

- Skills in the sophisticated techniques of a major area of concentration.
- Skills in communication using a variety of channels including writing, speaking, reading, listening, and viewing.
- Skills in analyzing and solving problems by recognizing ambiguities, using proper logic, marshalling pertinent facts and arguments, and using mathematical techniques where appropriate.
- Skills in the use of the imaginative and synthetic processes of the mind, including innovative thinking and recognition of the connections among a variety of intellectual frameworks and matrices.
- Skills involved in decision-making, including the ability to recognize alternatives, project consequences, and assume the responsibility for making decisions.

Attitudes

- An attitude of dispassionate self-appraisal, based upon an understanding of one's own nature and characterized by an awareness of one's own strengths and weaknesses.
- An attitude of open-mindedness, permitting one to see beyond the limits of one's own occupation, economic status, language, and culture, and including a respect for opinions different from one's own.
- A willingness to recognize and respect ethical obligations and the rights of others.
- A commitment to truth-seeking, characterized by objectivity, utilization of evidence, intellectual curiosity, and the search for wisdom.

Admission to Arts and Sciences Degree Programs

High school students and transfer students are admitted to pre-major programs on the basis of grade point average and test scores. After completing a specific number of credit hours, students seek admission to a degree program within the college.

Minimal college requirements for regular admission into many degree programs are completion of 30 to 58 hours of course credit, a 2.0 overall average, and a 2.0 average in courses already completed in the discipline of the degree program to which the student is applying. Specific degree programs or majors may have additional requirements.

Students may be admitted to degree programs in the Eberly College of Arts and Sciences in two distinct categories:

Regular Admission Student has met all degree program requirements.

Provisional Admission Student has completed 30 to 58 hours but has not yet met all Eberly College of Arts and Sciences and/or degree program requirements for entrance into the specific program. The department that accepts a student provisionally must state the terms of acceptance, including deficiencies, in writing. Failure by the student to remove deficiencies by the stipulated date will result in suspension from the degree program.

A student not admitted to a degree program by the time of completion of 70 hours of coursework will not be permitted to re-enroll in the college.

Students planning to qualify for teacher certification and earn a degree from Arts and Sciences should check with their advisors and the College of Human Resources and Education to determine the requirements for such certification.

Requirements for Degrees

B.A. Requirements

Students must complete WVU LSP requirements, college B.A. requirements, major requirements, and electives to total 128 hours.

1. **Foreign Language** Two years of study in one language. The student may satisfy this requirement by taking courses 101, 102, 203, and 204, or other approved courses, in one language. Students who present two or more units of high school credit in a foreign language may satisfy this requirement by taking courses 203 and 204, or other approved courses, in that language. Such students may elect to take courses 101 and/or 102 as additional preparation for courses 203 and 204. (For explanation of various options and other approved courses, see listings under "Foreign Languages" in the *WVU Undergraduate Catalog*). Courses used to fulfill this requirement are in addition to those used to fulfill the University Liberal Studies Program Cluster A requirement; thus, courses 100, 101, 102, 203, 204, or 200 could not be applied to Cluster A requirements if taken in the language used to meet the foreign language requirement.
2. **International Studies** Students must satisfactorily complete three semester hours of study of foreign countries or cultures, other than those of modern western Europe or Canada, and/or their role and interactions within the contemporary international system. This requirement may be simultaneously used to satisfy LSP requirements, but no course used to satisfy the foreign language requirement may be used to fulfill this requirement. Courses satisfying this requirement are the following: COMM 316; ENGL 139; FLIT 116, 117, 215, 252, 266, 271, 274; GEOG 102, 243, 310; HIST 104, 105, 106, 218, 242, 409, 425, 428, 430; POLS 103, 250, 260, 350, 351, 354, 355, 356, 358, 366, 369; RELG 230, 231, 232; SOCA 105, 255, 256, 322; TE 430, WMST 215.
3. **Fine Arts** Students must satisfactorily complete a minimum of three semester hours focused on the fine arts—art, literature, music, theatre, etc. Courses used to fulfill this requirement are in addition to those used to fulfill the Cluster A requirement. Courses satisfying this requirement are: ART 101; CLAS 232; COMM 305; ENGL 131, 132, 139, 154, 225, 226, 231, 232, 233, 241, 242, 252, 257, 261, 263, 272; FLIT 113, 114, 115, 116, 117, 118, 205, 206, 211, 212, 215, 225, 226, 231, 232, 241, 242, 251, 261, 262, 266, 273, 274; HUM 101, 102, 120; MUSC 170, 171, 172, 174, 175; SOCA 257; THET 101, 102, 361, 362, 363, 364, 420, WMST 215.
4. **Grade Point Average** A cumulative GPA of 2.0 is required for graduation.

B.S. Requirements

Students must complete WVU LSP requirements, college B.S. requirements, major requirements, and electives to total 128 hours.

1. **Foreign Language** Students completing an Eberly College bachelor of science program are encouraged (but not required) to complete two semesters of one foreign language beyond language taken at the high school level. Individual B.S. programs may require foreign language. For students completing B.S. programs, foreign language courses may be counted toward Cluster A. (Note University restrictions for Cluster A, p. 29).
2. **International Studies** Students must satisfactorily complete three semester hours of study of foreign countries or cultures, other than those of modern Western Europe or Canada, and/or their role and interactions within the conteporary international system. This requirement may be simultaneously used to satisfy LSP requirements. Courses satisfying this requirement are the following: COMM 316; ENGL 139; FLIT 116, 117, 215, 252, 266, 271, 274; GEOG 102, 243, 310; HIST 104, 105, 106, 218, 242, 409, 425, 428, 430; HUM 105,120; PHIL 350; POLS 103, 250, 260, 350, 351, 354, 355, 356, 358, 366, 369; RELG 230, 231, 232; SOCA 105, 255, 256, 322; TE 430; WMST 215.
3. **Mathematics** Satisfactorily completion of MATH 155 is required for students earning an Eberly College B.S. degree. MATH 155 may *not* be used to simultaneously satisfy LSP cluster C requirements and the B.S. science requirement (below).
4. **Science** Students must complete 24 hours of science coursework, with a minimum of two courses in each of three disciplines, selected from the following pairs of courses. There are six disciplines: biology, chemistry, computer science, geology/geography, math/statistics, and physics. Courses used to fulfill this requirement may be used simultaneously to satisfy LSP Cluster C requirements.

   Course satisfying the B.S. science requirement are the following:
   BIOL 115 and BIOL 117

   CHEM 111 and CHEM 112 *or*
   CHEM 115 and CHEM 116 *or*
   CHEM 117 and CHEM 118

   CS 110 and CS 111 *or*
   CS 110 and CS 201 (for students with programming experience) *or*
   CS 110 and CS 250 (for students with programming experience)

   GEOL 101/102 and (GEOL 103/104 *or* GEOL 201* *or* GEOL 203* *or* GEOL 230*)
   or
   GEOL/GEOG 110/111 and (GEOL 103/104 *or* GEOL 201* *or* GEOL 203* *or* GEOL 230*)

   MATH 156 and MATH 251
   MATH 156 and (STAT 211* *or* STAT 215*)
   (STAT 211* *or* STAT 215*) and (STAT 312* *or* STAT 331* *or* STAT 421*)

   PHYS 101 and PHYS 102 *or*
   PHYS 111 and PHYS 112

Note: *A three-credit-hour course. If completion of three pairs of courses—one pair from each of three disciplines, as grouped above—does not equal a total of 24 hours, students may elect any course(s) from the above list to complete the minimum of 24 hours, with the following exceptions: students may earn credit for only one set of PHYS courses (PHYS 101 and 102, *or* 111 and 112); students may earn credit for only one set of CHEM courses (CHEM 111 and 112, *or* 115 and 116, *or* 117 and 118); students may not earn credit for both STAT 211 and 215; students may not earn credit for both GEOL 103 and 230.

5. **Grade Point Average** A cumulative GPA of 2.0 is required for graduation. Individualized department requirements may be more directive than the college's core B.A. and B.S. requirements, so long as those requirements are met.

Credit Limitations

The following do not count toward the hours required for graduation:

- Courses in which the grade received is other than A, B, C, D, P, or S. Credit by examination, however, is counted toward hours required for graduation unless it was granted for courses otherwise excluded in this list.
- Any course passed more than once, unless a course is designated as repeatable in the catalog.
- More than 42 hours in one subject (e.g., BIOL, FRCH, POLS). In the case of English language and literature, the maximum excludes credits in English 101 and 102; in foreign languages, the maximum excludes the 6–12 hours used to fulfill the foreign language requirement of the Eberly College of Arts and Sciences. In SOCA, the maximum allows 42 hours in sociology and 42 hours in anthropology. In addition, for all B.A. candidates in the college, *Professional Field Experience* courses numbered 491 are not counted against the maximum hours in one subject.
- More than 72 hours of transfer credit from accredited junior or community colleges.
- More than 18 semester hours of credit for which only a grade of P is recorded. (See "Pass/Fail Grading.")
- Any course in which the final grade is F. The student must take the course again *in residence at WVU* to receive credit for it.

Minimum and Maximum Load

A minimum of 12 hours in a semester is required for full-time status in the Eberly College of Arts and Sciences. No student enrolled in the college may enroll for more than 19 hours in a semester without permission from the Academic Standards Committee.

Credit by Examination

Credit by examination provides students the opportunity to receive credit in courses by demonstrating that they have acquired sufficient knowledge of a subject without formal enrollment in a course or study in the classroom. This opportunity is offered only to students enrolled full- or part-time at the University. The initiation of a credit-by-examination request does not entitle a student to special in-class instruction or tutoring by an instructor.

Any student may petition to receive credit by examination for any course listed by a department in the Eberly College of Arts and Sciences as a course for which credit by examination is appropriately awarded. Applications, course lists, and examination schedules are available each semester.

A student may apply to challenge a course for credit by examination if:

- The student is at the time of examination registered in the University;
- The student's official record does not show credit for the course (i.e., any grade of S, P, A, B, C, D, or I);
- The student is not officially enrolled in the course at the time of examination (a student who withdraws from a course after the end of the official registration period is officially enrolled in that course until the end of the semester, and not eligible to take the course by examination during that semester); and
- A grade of F has not been recorded on the student's record for the course within two calendar years of the date of the examination. A student may challenge the same course by examination only two times.

Credit only (not a grade) will be awarded for the successful completion of the examination with a grade of C or higher. Because a comprehensive examination is used to establish credit, it is the policy of the college that a student should demonstrate at least an average (C) knowledge of course content to receive any credit. The criteria for earning a C are made known in advance to students who request the information from the department offering the course examination.

A non-refundable fee is charged for credit by examination and must be paid within the prescribed period prior to each examination period.

Eberly College of Arts and Sciences Requirements

Degree Program Requirements

Major Subject Requirements are listed separately in the catalog by department or degree program. To establish a major sequence and to qualify for graduation, the student must have spent at least two semesters and have accumulated a minimum of 30 semester hours as a student in a degree program.

Transfer Credit Except with the approval of the department chair or degree program coordinator, no upper-division course (300 or 400 level) in the major taken at another institution will be counted toward meeting the requirements of the degree program.

Grade Point Average All departments and degree programs in the college require at least a 2.0 (C) cumulative grade point average for admission; some departments or programs may require a higher cumulative grade point average. See specific departments for admission requirements.

Academic Minors

Several departments in the Eberly College of Arts and Sciences offer formal academic minors. If a student successfully completes the requirements for a formal minor, this will be recorded on the student's official record and will appear on transcripts.

Requirements for academic minors are set by the department offering the minor. A formal minor must include at least 15 hours of coursework with a minimum of nine hours at the upper-division level (course number of 300 or above). Specific courses may be required as well as a minimum grade or grade point average for courses in the minor. Courses in the minor may not be taken Pass/Fail. The minor field may not be the same as the student's major field.

A student should declare his or her intention to complete a minor when formally requesting admission to a major program. It is the student's responsibility to obtain information about the minor and to complete the required courses. At the time of application for graduation, the student must indicate that he or she wishes to be certified for the minor.

Application for Graduation and Diploma

All candidates for degrees in the Eberly College of Arts and Sciences must fill out an application for graduation and diploma in Student Services Center room 202. Candidates should make such application during the second semester of their junior year in order to have their records evaluated as to college and University requirements. Application must be made during the first month of the semester or session in which the candidate expects to be graduated. If a student does not graduate on the date for which the student applied initially, the student must re-apply for a later date. No candidate can be graduated without application.

Africana Studies Program

Priscilla M. Shilaro, Ph.D., Coordinator

Africana Studies Certificate Program

The Africana Studies Program is an academic unit within the Eberly College of Arts and Sciences. Approved by the WVU Faculty Senate in 1990, it offers a multidisciplinary program of study, which seeks to analyze the African World experience from the point of view of African peoples and those of African descent. The broad educational purpose of the program is to engender among all students an intellectual appreciation and understanding of the history and cultures of people of African descent throughout the world.

Students in the Africana Studies Program are required to work with a regular advisor to complete an individualized curriculum plan. Students must complete a total of 18 credit hours, with a minimum GPA of 2.5.

Requirements

MDS 220 *Introduction to African and African-American Studies*, MDS 493L *Seminar in Africana Studies*, and 12 additional credit hours approved by the ASP coordinator.

Application forms and further information about the program may be obtained from the Africana Studies Program Coordinator, 302C Woodburn Hall, P.O. Box 6303, Morgantown, WV 26506-6303.

Faculty Associates

Faculty members with interest in African and diaspora studies from across the University are affiliated with the Africana Studies Program through their teaching, research, and service.

Biochemistry

Mark R. Walbridge, Biology Chair
Harry O. Finklea, Chemistry Chair

Degree Offered

Bachelor of Arts

Nature of Program

The biochemistry curriculum prepares students for careers requiring a strong background in basic principles of the physical and life sciences. Students may earn either the bachelor of science (B.S.) in biochemistry through the Division of Animal and Veterinary Sciences in the Davis College of Agriculture, Forestry, and Consumer Sciences, or a bachelor of arts (B.A.) in biochemistry, with an area of emphasis in either molecular biology or in chemistry, through the interdepartmental bachelor of arts program in the Eberly College of Arts and Sciences. Students completing a biochemistry major are prepared for professional employment in the expanding fields of agricultural and environmental sciences, chemical industry, health-related industries, and biotechnology-based industries. The curriculum provides students with the interdisciplinary background in biochemistry, biology, chemistry, mathematics, physics, and molecular biology necessary as preparation for professional schools of human and veterinary medicine, dentistry, optometry, and pharmacy. It also provides strong preparation for graduate study in fields such as animal and plant agriculture, biochemistry, biology, biotechnology, chemistry, food science, nutrition, and physiology.

Performance Requirements

To maintain biochemistry major status and to graduate, students must maintain at least a 2.0 overall GPA and a 2.0 cumulative GPA in coursework in biology, chemistry, and biochemistry.

Degree Requirements

A total of 128 hours is required for graduation. The biochemistry core curriculum includes the following required courses (48 hours): Orientation to Biochemistry; MATH 155 and 156; PHYS 101 and 102 *or* PHYS 111 and 112; BIOL 115, 117, 219, and 310; CHEM 115, 116, 233, 234, 235, 236.

Following completion of the biochemistry core curriculum, students choose to pursue either a molecular biology area of emphasis or a chemistry area of emphasis.

Completion of the molecular biology area of emphasis requires 30 hours beyond the biochemistry core curriculum. The following courses are required (20 hours): BIOC 339 or AGBI 410/411; CHEM 215, 341 and 342; BIOL 313 or 410; *Senior Seminar in Biochemistry;* and a minimum of four hours of research (BIOL 386 *or* BIOL 486 *or* BIOC 492). The remaining ten hours may be selected from the following courses: BIOL 312, 313, 314, 315, 386, 410, 411, 412, 413, 436, 437, 486, 493; BIOC 492.

Completion of the chemistry area of emphasis requires 30 hours beyond the biochemistry core curriculum. The following courses are required (18 hours): BIOC 339 or AGBI 410/411; CHEM 215, 341, 342, 401, 403 (which serve as the capstone experience); BIOL 313 or 410; and *Senior Seminar in Biochemistry*. The remaining 12 hours may be selected from the following courses: BIOL 313, 436, 493; CHEM 310, 312, 313, 335, 337, 339, 411, 422, 441, 491, 497, 514, 531; BIOC 492. The student's program of study must include at least one CHEM course numbered 310 or higher. CHEM 117 and 118 may be substituted for CHEM 115, 116, and 215.

Biochemistry Program Honors

The option of graduating with biochemistry program honors is available to students with a 3.5 overall grade point average and the approval of the faculty in the department of the student's area of emphasis. Graduation with biochemistry program honors includes a senior thesis based upon an approved research project conducted under the supervision of a faculty mentor. For further information, and to apply for admission, qualified students should consult their advisors.

Suggested Biochemistry Curriculum

First Year

First Semester	Hrs.	Second Semester	Hrs.
BIOL 115	4	BIOL 117	4
CHEM 115 (or 117)	4-(5)	CHEM 116 (or 118)	4-(5)
MATH 155	4	MATH 156	3
BIOC 199	1	ENGL 101	3
LSP Elective	3	**Total**	**14 (or 15)**
Total	**16 (or 17)**		

Second Year

First Semester	Hrs.	Second Semester	Hrs.
BIOL 219	4	BIOL 310	3
CHEM 233/235	4	CHEM 234/236	4
PHYS 101 *or* 111	4	PHYS 101 *or* 112	4
ENGL 102	3	LSP Elective	3
Language	3	Language	3
Total	**18**	**Total**	**17**

Third Year

First Semester	Hrs.	Second Semester	Hrs.
BIOC 339 or AGBI 410/411	4	BIOL 313 or 410	3
CHEM 215*	4	CHEM 341/342	4
Language	3	Concentration Elective	4
LSP Elective	6	Language	3
Total	**17**	**Total**	**14**

Fourth Year

First Semester	Hrs.	Second Semester	Hrs.
Concentration Electives	7	Concentration Electives	3
LSP Elective	6	Biochem. Senior Seminar	1
Fine Arts	3	LSP Elective	6
Total	**16**	Free Electives	6
		Total	**16**
		Total Hours	**128**

* Or free elective if CHEM 117 and 118 were taken.

Biology

Mark R. Walbridge, Chair
William Peterjohn, Associate Chair

Degrees Offered

Bachelor of Arts
Bachelor of Science

Nature of Program

The Department of Biology offers two degree programs, the bachelor of science and the bachelor of arts in biology. An environmental biology track is also available in either degree program. These two programs are structured to meet the needs of all students who are interested in a career in the broad area of the life sciences.

The undergraduate programs provide an excellent preparation for those students who are preparing to attend graduate school and medical, dental, or other medically related professional schools. A degree in biology prepares students for a wide range of careers in the biological sciences including environmental biology, biotechnology, genetics, and other biologically related technical fields in government and private industry. In addition, with appropriate electives, students with a degree in biology can pursue a career in a wide array of areas including law, journalism, teaching, health care administration, and business.

After completing an initial four-semester core sequence in the biological sciences, students in the biology bachelor of arts program may choose to specialize in courses from three major areas of biology: cellular and molecular biology, ecology and evolution, or organismal biology. Those students pursuing the B.S. degree in biology are required to take at least one course from each of the major areas of biology to ensure an advanced broad-based knowledge of biology.

Irrespective of the degree program chosen, students will experience a wide variety of classroom environments from large lecture sections to small group discussions and intensive laboratory-oriented courses. Laboratory courses include topics such as cellular/molecular biology, comparative anatomy, ecology, ichthyology, invertebrate zoology, molecular genetics, plant systematics, and recombinant DNA technology, as well as many other laboratory experiences across the biological disciplines.

The two programs are similar during the first two years. They differ primarily in their mathematics requirements and in their biology requirements. The bachelor of science program requires more upper-division biology courses.

Biology Scholarships

In addition to the financial aid offered by WVU, the Department of Biology maintains two scholarship programs specifically for biology majors. The Ethel C. Montiegel Award is awarded to students, usually in their junior year, who have shown a particular aptitude for biology and have demonstrated a clear desire for a career in the biological sciences.

The Henry W. Hurlbutt Memorial Endowment is awarded to undergraduate students who are conducting independently mentored research through the Department of Biology's Undergraduate Research Program. This endowment provides resources for students to attend professional meetings, travel to perform research, or to support the cost of research activity within WVU.

Admission Requirements

In addition to college requirements, admission to the program requires a 2.0 overall grade point average, 12 hours of biology, and a cumulative GPA of at least 2.0 for courses in biology. To maintain biology major status and graduate, students must maintain at least a 2.0 cumulative average for biology courses at WVU.

Bachelor of Science Requirements in Biology

The B.S. in biology requires a minimum of 38 hours in biology or approved courses in the biological sciences with 128 hours total required for graduation. Required courses include:

- Biology (BIOL) 115, 117, 219, and 221 with a "total science experience laboratory section," which should be taken in this sequence.
- Chemistry (CHEM) 115 *or* 117 (which should be taken concurrently with BIOL115 if possible); CHEM 116 *or* 118; Organic Chemistry (CHEM) 233, 234, 235, and 236.
- Mathematics Calculus (MATH) 155, Statistics (STAT) 211, MATH 156 (optional).
- Physics (PHYS) 101 *or* 111 and 102 *or* 112.

The inclusion of MATH 156 and PHYS 111 and 112 is strongly recommended.

Bachelor of science candidates must take 21 hours of electives selected from any of the following four groups of courses. At least two of the selected courses must have a laboratory and at least one course must be selected from each of the four groups.

Group I *Cell and Molecular Biology:* BIOL 310, 311, 312, 313, 314, 315, 316, 410, 411, 412, 413, 414, and 415.

Group II *Organismal Biology*: BIOL 336, 337, 339, 341, 348, 350, 351, 352, 353, 430, 436, 437, 439, 440, 441, 450, and ENVM 241.

Group III *Evolution and Ecology*: BIOL 301, 493 *Symbiosis*, 338, 361, 362, 461, 462, 463, 464, ENVM 401, GEOL 331.

Group IV: PHYS 293 *Medical Physics*, AGBI 410 *Agricultural Biochemistry*, BIOC 293 *Introduction to Biochemistry*, and BIOL 302 *Biometry*.

Only two of the non-BIOL courses listed above can be used to fulfill the 21-hour elective requirement. With permission from the department, students may enroll in BIOL 386 and 486 for credit; however, only six hours of BIOL 386 and 486 may be used towards the 21-hour elective requirement. Graduate (500-level) courses in biology may be taken if approved by the dean and department.

BIOL 235, 293, 491, 493, and 793 *Independent Study,* do not satisfy the required 21 hours of electives in biology. They can serve as general electives.

Bachelor of Arts Requirements in Biology

The B.S. with a major in biology requires a minimum of 31 hours to a maximum of 42 hours in biology, with 128 total hours required for graduation. Required courses include:

- Biology (BIOL) 115, 117, 219, and 221, which must be taken in this sequence.
- Chemistry (CHEM) 115 or 117 (which should be taken concurrently with BIOL 115), CHEM 116 or 118, 233, 234, 235, and Agricultural Biochemistry (AGBI) 410 may be taken in lieu of CHEM 234 and 236 with permission of the biology department chair. However, this is not advisable due to requirements of graduate and professional schools.
- The mathematics requirement includes either MATH 155 and 156 *or* MATH 150 and Statistics (STAT) 211.
- Physics (PHYS) 101 *or* 111 and 102 *or* 112 are required.
- Fifteen hours of required biology electives, one of which must have a laboratory, may be selected from the following list: BIOL 386 (limited to four hours of credit), 486 (limited to four hours of credit), 301, 350, 493 (sections B and up), 302, 310, 311, 312, 313, 314, 315, 316, 336, 337, 338, 339, 340, 341, 348, 351, 352, 353, 361, 362, 363, 410, 411, 412, 413, 414, 415, 436, 437, 438, 439, 440, 441, 450, 461, 462, 463, 464.

Only one approved non-BIOL course can be used to fulfill the 15-hour elective requirement. Permission of the department must be obtained to enroll in BIOL 293, 386, 486, 491, and 493A; however, only four credit hours of 386/486 may be used towards the 15-hour elective requirement. Graduate (500-level) courses in biology may be taken if approved by the dean and department.

BIOL 293, 235, 491, 493A, and 793A do not satisfy the required 15 hours of electives in biology. They can serve as general electives.

Honors Program

A departmental Honors Program for qualified students provides the opportunity to do independent research. To be eligible, a student must have a 3.4 overall average and the approval of the departmental honors faculty. Qualified students should consult their advisors about admission.

Individual original research, a senior thesis, and a seminar are required parts of the Honors Program.

Suggested Biology (B.A.) Curriculum

First Year

First Semester	Hrs.	Second Semester	Hrs.
BIOL 115	4	BIOL 117	4
CHEM 115	4	CHEM 116	4
MATH 155	4	MATH 156	4
ORIN 101	3	LSP Elective	3
Total	**15**	ENGL 101	3
		Total	**18**

Second Year

First Semester	Hrs.	Second Semester	Hrs.
BIOL 219	4	BIOL 221	4
CHEM 233	3	CHEM 234	3
CHEM 235	1	CHEM 236	1
PHYS 101	4	PHYS 102	4
Foreign Language 101	3	Foreign Language 102	3
ENGL 102	3	LSP Electives	3
Total	**18**	**Total**	**18**

Third Year

First Semester	Hrs.	Second Semester	Hrs.
BIOL Elective	3 (or 4)	BIOL Elective	3 (or 4)
Foreign Language 203	3	Foreign Language 204	3
LSP Electives	6	LSP Electives *including*	
Fine Arts	3	International Studies	9
Total	**15 (or 16)**	**Total**	**15 (or 16)**

Fourth Year

First Semester	Hrs.	Second Semester	Hrs.
BIOL Elective	3	BIOL Elective	6
General Electives	12	General Electives	9 (or 10)
Total	**15**	**Total**	**15 (or 16)**
		Total Hours	**128**

Suggested Biology (B.S.) Curriculum

First Year

First Semester	Hrs.	Second Semester	Hrs.
BIOL 115	4	BIOL 117	4
CHEM 115 (or 117)	4 (or 5)	CHEM 116 (or 118)	4 (or 5)
MATH 155	3	STAT 211	3
Cluster Elective	3	ENGL 101	3
Total	**14 (or 15)**	Cluster Elective	3
		Total	**17 (or 18)**

Second Year

First Semester	Hrs.
BIOL 219	4
CHEM 233, 235	4
PHYS 101 (or 111)	4
ENGL 102	3
Total	**15**

Second Semester	Hrs.
BIOL 221	4
CHEM 235, 236	4
PHYS 102 (or 112)	4
General Elective	3
Total	**15**

Third Year

First Semester	Hrs.
BIOL Elective	3 (or 4)
Cluster Elective	3
Cluster Elective	3
General Elective	6
Total	**15 (or 16)**

Second Semester	Hrs.
BIOL Elective	4
BIOL Elective	3
Cluster Elective	3
General Elective	6
Total	**16**

Fourth Year

First Semester	Hrs.
BIOL Elective	3 (or 4)
BIOL Elective	3
General Elective	6
Cluster Elective	6
Total	**18 (or 19)**

Second Semester	Hrs.
BIOL Elective	3 (or 4)
BIOL Elective	3
Cluster Elective	6
General Elective	6
Total	**18 (or 19)**
Total Hours	**128**

Chemistry

Harry O. Finklea, Chair
Jeffrey L. Petersen, Associate Chair

Degrees Offered

Bachelor of Arts, Bachelor of Science

Nature of Program

The Department of Chemistry offers three degree programs: the bachelor of science (chemistry), the bachelor of arts with a major in chemistry, and the bachelor of arts in biochemistry with an area of emphasis in chemistry. These programs meet the needs of all students who have an interest in the broad field of chemistry.

The Department of Chemistry is located in Clark Hall, a state-of-the-art facility for undergraduate chemistry. Clark Hall offers many new instruments, numerous safety features, excellent ventilation and ample hoods, and complete accessibility for the physically handicapped. The department also has modern research facilities in the adjacent chemistry research laboratory building where advanced undergraduates may participate in research projects.

The bachelor of science (chemistry) is approved by the American Chemical Society. This program is for students who desire to qualify for professional positions in industry and governmental services as well as those who plan to do graduate work in chemistry or allied areas in preparation for research careers in industry or universities and colleges.

The bachelor of arts with a major in chemistry is for students who plan careers requiring a good background in the basic principles of chemistry. Areas such as medicine, dentistry, or other health-related sciences; secondary school teaching; chemical laboratory technical work; or even law or business may be pursued with a proper choice of electives.

The two programs are similar during the first two years. Students in the B.S. program should complete the calculus requirement as soon as possible as a prerequisite for both the physics and physical chemistry sequences. The two degree programs differ primarily in the chemistry requirements. The B.S. program requires more upper-level chemistry than the B.A. program.

Chemistry Scholarships

In addition to financial aid offered by the University, the department maintains three scholarship programs specifically for chemistry majors. The John A. Moore Chemistry Scholarships are awarded to students who are West Virginia residents, are in the B.S. program, have records of outstanding achievement, and have demonstrated financial need. The Charles L. Lazzell Scholarship and The Carpenter Family Scholarship are awarded to students in either the B.S. or B.A. programs with records of outstanding achievement and demonstrated financial need. Scholarship recipients are expected to remain as chemistry majors and to maintain a 3.0 average in their degree programs in order to be eligible for continued support.

Admission Requirements

In addition to college requirements, admission to either program and continuance in each requires a cumulative average of 2.0 or higher for courses in chemistry taken in the WVU Department of Chemistry.

Degree Requirements

Bachelor of Science with a Major in Chemistry

A total of 128 hours is required, subject to the general course exclusions for all degrees. The following courses are required: Chemistry (CHEM) 117 and 118 *or* CHEM 115, 116, and 215; CHEM 233, 234, 235, 236, 310, 313, 335, 346, 347, 348, 349, 401, 403, 422, 423, AGBI 410, plus six hours of approved chemistry electives: MATH 155, 156, 251; Physics (PHYS) 111, 112. The six hours of approved chemistry electives must be selected from the following courses: CHEM 312, 337, 339, 411, 441, 450, 493, 496, 497, 514, 531, 532, 541; subject to the restriction that only three hours of CHEM 493, 496 *or* 497, separately or combined, may be counted toward the six-hour requirement. The following courses in other areas are recommended for consideration as general electives: Computer Science (CS) 101; ENGL 305; MATH 261, 465; PHYS 213, 325; STAT 331. A 2.0 average must be maintained in all chemistry courses above CHEM 236. A C or better grade in all prerequisites for chemistry courses is required for chemistry majors; the courses involved are chemistry courses, PHYS 112, MATH 156, and MATH 251.

Bachelor of Arts with a Major in Chemistry

The following courses are required: CHEM 115, 116 and 215, *or* CHEM 117 and 118; CHEM 233, 234, 235, 236, 341, 342, 401, (capstone requirement) 403 plus seven hours of approved chemistry electives; eight hours of non-chemistry electives from Cluster C and/or engineering courses that include a lab, excluding other required courses; MATH 155, 156; PHYS 101, 102. The seven hours of approved chemistry electives must be selected from the following courses: CHEM 310, 312, 313, 335, 337, 339, 411, 422, 423, 441, 493, 496, 497, 514, 531, 532, 541 subject to the restriction that only three hours of CHEM 493, 496, or 497, separately or combined, may be counted toward the seven-hour elective requirement. A grade of C or better in all prerequisites for chemistry courses is required for chemistry majors; the courses involved are chemistry courses, PHYS 102, and MATH 156. Also, a 2.0 average must be maintained in all chemistry courses above CHEM 236, 493.

Options

Students in the B.A. program may use AGBI 410 or 610 to meet part of the seven-hour chemistry elective requirement; however, at least three hours must be selected from chemistry courses numbered 310 or higher.

Students in the B.A. program may take CHEM 346, 347, and 348 in lieu of CHEM 341 and 342 and three hours of chemistry electives. CHEM 349 may be taken as two hours of chemistry elective.

Students in either degree program may seek admission to the departmental Honors Program. A student must have a 3.5 average in chemistry courses taken at WVU and must have the endorsement of the chemistry faculty. A student may apply for admission to the program at any time after the student's first semester and no later than three semesters before graduation.

The program includes a written report based upon a research project performed under the supervision of a member of the chemistry faculty. For further information a student should consult the associate chairperson.

Suggested Chemistry (B.A.) Curriculum

First Year

First Semester	Hrs.	Second Semester	Hrs.
CHEM 115 (or 117)	4 (or 5)	CHEM 116 (or 118)	4 (or 5)
MATH 115 (or 126)	4 (or 3)	MATH 156 (or 128)	4 (or 3)
Cluster Elective	3	ENGL 101	3
Phys Ed (optional)	1	Phys Ed (optional)	1
Non-Chemistry Elective*	4	Non-Chemistry Elective*	4
Total	**16 (or 17)**	**Total**	**16 (or 17)**

Second Year

First Semester	Hrs.	Second Semester	Hrs.
CHEM 233	3	CHEM 234	3
CHEM 234	1	CHEM 235	1
PHYS 101	4	PHYS 102	4
Foreign Language	3	Foreign Language	3
Clust. Elect. (or MATH 155)	3 (or 4)	Clust. Elect. (or MATH 156)	3 (or 4)
ENGL 102	3	Cluster Elective	3
Total	**17 (or 18)**	**Total**	**17 (or 18)**

Third Year

First Semester	Hrs.	Second Semester	Hrs.
CHEM 215 if 117 and 118 were not taken	4	CHEM 341	3
		CHEM 342	1
Cluster Elective *or* Foreign Lang. (if necessary)	3	Cluster Elective *or* Foreign Lang. (if necessary)	3
Cluster Electives	6	Cluster Electives	6
Fine Arts	3	CHEM Elective	3
Total	**16**	**Total**	**16**

Fourth Year

First Semester	Hrs.	Second Semester	Hrs.
CHEM 401	1	CHEM 403	1
CHEM Elective	2	Cluster Elective (if needed)	3
Cluster Elective (if needed)	3	General Electives	11
General Electives	9	**Total**	**15**
Total	**15**	**Total Hours**	**128**

*Must include eight hours of Cluster C and/or engineering courses that include a lab excluding other required courses and excluding CHEM 493, 496, and 497.

Suggested Chemistry (B.S.) Curriculum

First Year

First Semester	Hrs.	Second Semester	Hrs.
CHEM 117 (or 115)	5 (or 4)	CHEM 118 (or 116)	5 (or 4)
MATH 155	4	MATH 156	4
Cluster Electives	6	ENGL 101	3
General Elective	3	Cluster Electives	6
Total	**18 (or 17)**	**Total**	**18 (or 17)**

Second Year

First Semester	Hrs.
CHEM 215 (if CHEM 115 & 116 were taken)	4
CHEM 233	3
CHEM 235	1
PHYS 111	4
MATH 251	4
Total	**16**

Second Semester	Hrs.
CHEM 234	3
CHEM 236	1
PHYS 112	4
Cluster Elective	3
ENGL 102	3
Total	**14**

Third Year

First Semester	Hrs.
CHEM 335	4
CHEM 346	3
AGBI 410	3
Cluster Electives	6
Total	**16**

Second Semester	Hrs.
CHEM 310	3
CHEM 348	3
CHEM 347	1
General Electives	9
Total	**16**

Fourth year

First semester	Hrs.
CHEM 401	1
CHEM 313	1
CHEM 422	3
CHEM 349	2
CHEM Electives	3
General Electives	6
Total	**16**

Second semester	Hrs.
CHEM 403	1
CHEM 423	2
CHEM Elective	3
General Electives	6 (or 8)
Cluster Elective	3
Total	**15 (or 17)**
Total Hours	**128**

Communication Studies

Matthew M. Martin, Chair
Brian R. Patterson, Undergraduate Coordinator

Degree Offered

Bachelor of Arts

Nature of Program

The Department of Communication Studies offers a curriculum to meet the needs of liberal arts and pre-professional students oriented toward communication-related careers. The undergraduate curriculum focuses upon the application of theory and research in human communication to a variety of personal, social, and organizational settings. Majors may elect to follow either a data analysis specialty or an applied communication emphasis. All majors complete a capstone sequence that consists of two courses intended to integrate academic coursework and apply course material to real-world experience.

Data Analysis Specialty

This curriculum is designed for students who desire a broad, liberal-arts emphasis or who plan to enter graduate study in communication. Special emphasis is given to the design, collection, and analysis of human communication data. In addition, students acquire background in interpersonal, nonverbal, organizational, and mass communication.

Admission Requirements To be admitted to the major, students must have a cumulative grade point average (GPA) of 3.0; a cumulative 3.0 GPA in all Communication Studies classes; of have completed COMM 200 and 201 with a combined GPA of 3.0; and have completed at least 30 hours of coursework.

The data analysis specialty area of emphasis requires 128 hours, of which students must complete a minimum of 36 hours in communication studies that includes COMM 200, 201, 401, 403, and 491. While students may take over three credits of COMM 491 *Field Experience*, only three credits of 491 will count toward the necessary 36. All students must complete a minimum of 30 hours of credit, 21 of which must be in communication studies, following the semester in which they were admitted to this program. Students must also complete 21 hours of coursework outside of the department. Within these 21 hours, students must complete CS 101, STAT 211 or ECON 225, MATH 126, and PSYC 202. Additional decisions involving elective coursework to fulfill this 21 hour requirement will be made in consultation with a communication studies advisor.

Applied Communication Studies

This curriculum is designed for students who plan careers in business or government organizations. Along with a core of general communication coursework, it allows students to design a plan of study that will meet their varying interests and career goals.

Admission Requirements To be admitted to the major, students must have a cumulative grade point average (GPA) of 2.5; a cumulative GPA in all communication studies classes of 2.5; have completed COMM 200 and 201 with a combined GPA of 2.5; and have completed at least 30 hours of coursework.

The applied communication studies area of emphasis requires 128 hours, of which students must complete a minimum of 36 hours in communication studies that includes COMM 200, 201, 403, and 491. While students may take over three credits of COMM 491 *Field Experience*, only three credits of 491 will count toward the necessary 36. Students must complete 15 hours from the following: COMM 105, 202, 306, 307, 308, 309, 316, 317, 404, 405, 406, and 408. An additional three hours are selected from the following: COMM 212, 303, 304, 305, and 314. All students must complete a minimum of 30 hours of credit, 21 of which must be in communication studies, following the semester in which they were admitted to this program. Students must also complete 21 hours of coursework outside of the department. Within these 21 hours, students must complete CS 101 and STAT 111. The department recommends that STAT 111 be taken prior to COMM 201. Additional decisions involving elective coursework to fulfill this 21-hour requirement will be made in consultation with a communication studies advisor.

Graduation

Students must maintain a cumulative GPA of 2.5 in all courses in the department to be certified for graduation with a major in communication studies. Courses in communication studies that the student wishes to count toward the major must be completed with a grade of C or better. The minimum requirement for a major in communication studies is 36 hours. A maximum of 42 hours in communication studies may be counted toward graduation.

Advisement

Before or during the second semester of the freshman year, students interested in pursuing a major in communication studies should consult with a department advisor.

Minor in Communication Studies

Students may elect to complete a 15-credit-hour minor in the field of communication studies. This minor is designed to provide a broad overview of the field. COMM 100 and 102, or 100 and 104, or 200 (three hours), plus COMM 105, 306, and 308 (nine hours) are required. In addition, the student must complete COMM 309, 316, *or* 305 (three hours). Students must achieve a grade of C or better in each course counted toward the minor to be certified as a minor in communication studies at graduation.

Computer Science

George E. Trapp, Chair
James D. Mooney, Associate Chair

Degree Offered

Bachelor of Science

Nature of Program

The Department of Computer Science and Electrical Engineering in the College of Engineering and Mineral Resources (CEMR) offers a major in computer science leading to a bachelor of science. The degree is conferred through the Eberly College of Arts and Sciences (ECAS). The objective of this computer science curriculum is to prepare students for professional positions in business, industry, research, government service, or graduate study in computer science as well as professional schools.

The computer science major is intended to educate students in the computer science areas of analysis of algorithms, programming languages, systems programming, and software engineering.

Normally, a student is first admitted to the pre-computer science program of study. After meeting the requirements, the student then moves into the computer science program. This transition into the computer science program normally takes place at the end of the sophomore year.

The B.S.C.S. option through ECAS offers flexibility in choosing a liberal education that could include courses, even dual majors, offered in many colleges: Arts and Sciences, Business and Economics, Creative Arts, or any others for which course prerequisites are satisfied. The required two-semester sequence in science can be fulfilled through a variety of science disciplines, but a few requirements on selection of senior level computer science course lean to the theoretical side of the discipline. This option is best suited for students who want a more liberal education with the opportunity to pursue minors or double majors outside engineering.

The B.S.C.S. option through CEMR introduces students to engineering principles through Engineering 101/199 and required courses in computer engineering. Chemistry and a two-semester sequence in physics is also required, but the student gains flexibility in choosing senior level CS courses, which leaves open the opportunity to explore much of software engineering or other areas. This option is well-suited for freshman engineering students who meet pre-CS entrance requirements, and for engineering students who want to double major in computer science and computer engineering.

See College of Engineering and Mineral Resources for complete program information.

Economics

William N. Trumbull, Chair

Degree Offered

Bachelor of Arts

Nature of Program

The Department of Economics offers two majors in economics: one through the College of Business and Economics and the other through the Eberly College of Arts and Sciences. The College of Business and Economics grants a bachelor of science in economics. The Eberly College of Arts and Sciences grants a bachelor of arts with a major in economics.

The program leading to the B.A. degree is designed for students who wish to combine fundamental training in economics with a liberal arts education. In addition to the liberal studies and related requirements, students have in excess of 40 credit hours of unrestricted electives.

Economics students are taught to identify the costs and the benefits of a decision, which are sometimes not obvious. The economist has the skill to identify the real consequences of a decision. That skill is valued highly.

Economics is a useful major for anyone interested in a career in politics, business, law, foreign service, government, banking, or any other field in which the ability to make or analyze policy decisions is important. The demand for people with degrees in economics, both at the graduate and undergraduate levels, is high.

Economics deals with some of today's most pressing issues: acid rain, support for the poor, international trade, unemployment, capital punishment, education, the deficit, the third world, and national defense.

Admission Requirements

Students making application for initial admission to the major in economics must meet the following requirements:

- Completion of 58 or more credit hours with a cumulative grade point average of 2.5 or better.
- Completion of each of the following courses with a grade of C or better: Economics (ECON) 201, 202, and 225.
- Completion of English (ENGL) 101 and 102.
- A semester of calculus (MATH 150 or 155) with a grade of C or better.

Degree Requirements

ECON 201, 202, 225, 301, 302, and 481 are required. Any student planning to pursue graduate work in economics should take MATH 155 and 156. Additional recommended courses can be determined in consultation with an economics advisor.

Majors are also required to take 15 additional hours of economics courses numbered 300 or above for a minimum of 27 upper-division course hours in economics. Economics majors must maintain a grade point average of 2.0 for all economics courses (to be computed using the last grade earned in each economics course). Economics majors are required to have a grade of C or better in ECON 301 and 302.

Economics majors may take a maximum of nine of their 33 credit hours of economics courses out of residence. Transfer students must take a minimum of 15 credit hours of upper division economics courses in residence. The undergraduate advisor can waive this requirement under special circumstances.

Minor in Economics

To earn a minor in economics, a student must complete the following courses with a grade point average of 2.0 or better: ECON 201, 202, 301, 302, and two upper-division economics electives.

English Language and Literature

Timothy Dow Adams, Chair
Timothy Sweet, Associate Chair

Degree Offered

Bachelor of Arts

Nature of Program

The department offers programs for students who intend to pursue a graduate degree in English, attain secondary certification to teach English or language arts, concentrate in literature and language as preparation for entrance into professional schools, or concentrate in creative writing or professional writing and editing.

Students interested in undergraduate creative writing should speak with the coordinator of creative writing to be sure an appropriate program file is developed.

Because English majors have varying interests in literature, language, and writing, they are strongly urged to consult the department's undergraduate advisors to plan their coursework. To aid majors in their deliberations, the department has prepared a statement

explaining special features of its curriculum, informing students of the opportunity to double major, and suggesting courses for students interested in literary history, genre studies, language studies, creative writing, professional writing, ethnic and minority literature, Appalachian studies, women's studies, and graduate study in English.

Admission Requirements

Students may apply for admission to the degree program when they have completed 58 hours with an overall 2.0 grade point average, a minimum 2.0 average for English courses taken at WVU, and grades of C or better in English (ENGL) 101 and 102 and all required English courses taken prior to admission (see list below). Majors must maintain at least a 2.0 cumulative average in all English courses taken at WVU to maintain their status.

Degree Requirements

An English major requires a minimum of 33 hours in literature, language, and writing, exclusive of English 101 and 102. A maximum of 42 hours in English, exclusive of ENGL 101 and 102, may be included within the 128 hours required for graduation.

Required Courses ENGL 241, 242, 261, and 262; one course from ENGL 221, 321, or 323; ENGL 263 or 363; at least 12 additional hours of upper-division courses offered by the Department of English in literature, language, theory, or writing; a capstone course, ENGL 418, 491, or 496. At least nine hours of the student's total coursework for the major must be at the 300 level or above. Students must earn a grade of C or better in all courses that are counted toward the major plus English 101 and 102.

Concentration in Creative Writing

English majors may obtain a concentration in creative writing by fulfilling the requirements for a minor in creative writing.

Concentration in Professional Writing and Editing

English majors may obtain a concentration in professional writing and editing by fulfilling the requirements for a minor in professional writing and editing.

Minor in English

Any student admitted to a degree program within the University may take a minor in English. Such a minor consists of any 15 hours beyond ENGL 101 and 102 with a minimum of nine hours at the upper-divisional level. Students are advised to design their own English minor to complement the work in their major. Only courses in which the student earns a grade of C or better can be applied to the English minor.

Minor in Creative Writing

Any student admitted to a degree program other than English may take a minor in creative writing. Such a minor consists of 15 credit hours taken in the following sequence:

1. One course, with a grade of C or better, from among ENGL 212, 213, or 214.
2. With permission of the instructor, one course from among ENGL 312, 313, or 314.
3. With permission of the instructor, ENGL 318.
4. With permission of the Department of English Creative Writing Committee, ENGL 418.
5. One additional course from among those listed in category 1 (which may be taken at any time) or category 2 (which must be taken after the completion of one of the courses in category 1).

Minor in Professional Writing and Editing

Any student admitted to a degree program other than English may take a minor in professional writing and editing. Such a minor consists of 15 credit hours as follows: ENGL 201 or 303 (three hours); ENGL 202, 302, 305, and 491 (12 hours). To earn this minor, students must earn a grade point average of 3.0 or higher across ENGL 202, 302, 305, and 201 or 303. Students must successfully complete at least nine hours in the minor before being eligible to take ENGL 491.

Publications

The Eighteenth Century: Theory and Interpretation, a journal of literature, culture, and history from 1660 to 1800.

Victorian Poetry, a critical journal of Victorian literature, is edited by the Department of English. The journal was established at WVU in 1963 and has become internationally known, with subscribers in 27 countries.

Calliope, a publication of WVU student writing, is sponsored by the Department of English and the English Honorary and Club.

Maddening Loop, an on-line literary magazine.

JAMESF-L, an electronic discussion group, is devoted to scholarship on the James family, including Henry, the novelist, and William, the philosopher and psychologist.

WOOLSN-L, an electronic discussion group, is devoted to scholarship on Constance Fenimore Woolson and her circle.

NASSR-L, an electronic discussion group, is devoted to scholarship in British Romantic studies.

Foreign Languages

Jeffrey Bruner, Chair
Michael Lastinger, Associate Chair

Degree Offered

Bachelor of Arts
Majors: French, German, Russian, Spanish

Nature of Program

Coursework is offered in foreign literatures and cultures, linguistics, and languages, including French, German, Italian, Japanese, Latin, Russian, and Spanish. Literature courses taught in English are designated as Foreign Literature in Translation (FLIT) courses. Other areas of instruction are Language (LANG), dealing with methodology of second language acquisition, and English as a Second Language (ESL). The department houses the WVU Intensive English Program, which offers instruction in English as a second language for students seeking admission into the University, or to improve their command of the language.

The primary goal of the program in foreign languages is to provide students with a solid liberal arts education that is the foundation for personal and professional success and growth over a lifetime. The curriculum is designed to prepare students with well-developed cognitive and communication skills and with a broad knowledge base that will enable them to pursue additional studies at the graduate level or to enter the job market in positions that will demand the ability to communicate in more than one language and in a variety of cultural contexts.

Career Goals for Graduates

In today's rapidly increasing global economy, students may use foreign language study to add a valuable international dimension to myriad career opportunities such as teaching, business, economics, government work and foreign service, journalism, law, medicine, and computer and other scientific research.

Placement Testing

Students who have studied French, German, or Spanish in high school and who wish to continue the study of these languages at WVU must take a computerized placement test before entering the program. Those who complete the course in which they are placed with a B or better will receive back credit for all courses out of which they placed. Fees for this back credit are waived. The placement test can be taken one time only and must be taken before completing any coursework in the languages at WVU.

Admission Requirements

The Department of Foreign Languages uses the requirements of the University. To major in foreign languages, students must have satisfactorily completed elementary and intermediate course sequences in a given language and completed 58 credit hours with an overall 2.0 grade point average.

Graduation Requirements

Students may select from among four areas of emphasis for a major leading to a bachelor of arts in foreign languages. A major must complete 33 hours of upper-division coursework beyond the intermediate level of the targeted language. The 33 hours include 24 hours of required courses and nine hours of electives in the major. As part of the 24 hours of required courses, a capstone experience of three hours must be taken any time after completion of 21 upper-division hours in the major.

Students completing a major in foreign languages at WVU must fulfill a residency requirement of 15 upper-division hours on campus in their major area of emphasis, excluding courses numbered 493 and courses obtained through credit by examination.

Foreign language majors must achieve a minimum grade point average of 2.25, both overall and in the major, to qualify for graduation. They must also satisfy University Liberal Studies Program and Eberly College of Arts and Sciences requirements and earn a total of 128 hours of credit.

In addition to the courses required for the foreign language major, students should select relevant courses in history, political science, humanities, geography, sociology, and/or business and economics. Students are strongly encouraged to work closely with advisors and faculty in the department to select cognate courses, second majors, and/or minors that will complement their work in foreign languages and lead to meaningful career options. Students wishing to teach should inquire early in their program about courses to fulfill certification requirements.

Areas of Emphasis

In addition to fulfilling general degree requirements listed above, students majoring in foreign languages must select one of the following areas of emphasis and fulfill the requirements listed:

French: FRCH 301, 302, 303, 304, 331 or 332, 431 or 432, 496 (capstone), LING 311, and nine hours of upper-division electives in French.

German: GER 301, 302, 303, 304, 331 or 332, 341 or 441, 496 (capstone), LING 311, and nine hours of upper-division electives in German.

Russian: RUSS 301, 302, 303, 304, 331 or 332, 451, 496 (capstone), LING 311, and nine hours of upper-division electives in Russian.

Spanish: SPAN 301, 302, 303, 304, 330 or 340, 331 or 332 or 341 or 342, 480 or 481 or 496 (capstone), LING 311, and nine hours of upper-division electives in Spanish.

Dual Degree in Business and Foreign Languages

The coordinated dual degrees in business and foreign languages provide global opportunities to students seeking both a bachelor or arts with a major in foreign languages and a bachelor of science in business. For details, contact the Department of Foreign Languages.

Programs Abroad

The Department of Foreign Languages regularly offers language courses abroad. Currently, summer courses are offered in Germany, Spain, Mexico, and France. Students participating in a summer program normally register for six credit hours. Contingent upon funding and faculty availability, the department will offer similar programs in the period 2003-2005.

Minor

Students may complete an academic minor in foreign languages. The minor consists of 15 credit hours of coursework in one of seven areas: French, German, Russian, Spanish, foreign literature in translation (FLIT), linguistics, and teaching English as a second language (TESL). Students must achieve a minimum grade point average of 2.25 in the courses for the minor.

Requirements for the minor in French, German, Russian, and Spanish include two of the following courses in the target language: 301, 302, 303, 304, and nine additional upper-division hours in the same target language. LING 311 may be substituted for three of the nine additional hours.

The minor in foreign literature in translation requires a selection of 15 hours of FLIT classes, nine of which must be on the upper-division level. At least two different national literatures must be represented in the selection.

The minor in linguistics requires LING 311, 411, 412, 511, and 514.

The minor in teaching English as a second language (TESL) requires LING 311, 511, 512 or 514, LANG 322, and LANG 421.

Students completing a minor in foreign languages must complete a residency requirement of six upper-division hours on campus in their minor area of emphasis. They may not use courses numbered 493 or courses obtained through credit by examination to satisfy the residency requirement.

Additional Points of Information

- Foreign language courses are divided into elementary, intermediate, and advanced levels. The elementary level, courses 101 and 102, provide beginning work in understanding, speaking, reading, and writing the languages, with emphasis on communicative competence. The vocabulary is limited to words of high frequency. Intermediate level, courses 203 and 204, continues training in the four basic skills, with greater emphasis on reading. The vocabulary is greatly extended, especially the passive or recognition vocabulary. In courses 301, 302, 303, and 304, the four basic skills are further developed. All classroom questions and discussions are in the foreign language. The work is based on reading assignments followed by classroom discussions, oral drills, and written exercises.
- Courses numbered 100 are intensive and equal to courses 101 and 102. Students may receive credit for either course 101 and 102 or 100 but not for both. Courses numbered 200 are the intensive equivalent of courses 203 and 204. Students may receive credit for courses 203 and 204 or 200 but not both.
- Students who present two or more units of high school credit in a foreign language may satisfy the foreign language requirement of the Eberly College of Arts and Sciences by taking courses 203 and 204, or other approved courses on the same or higher level, in that language.
- The Department of Foreign Languages offers a credit by examination program for elementary and intermediate classes in French, German, Italian, Russian, and Spanish only. Information about the program is available in the Department of Foreign Languages.

Dual Degree in Business and Foreign Languages

Non-Business and Economics Courses	**Hrs.**
ENGL 101 and 102 *Composition and Rhetoric*	6
ENGL 202 *Business English*	3
MATH 124 *Finite Mathematics or* MATH 129 *Pre-calculus*	3-4
Liberal Studies Program (LSP) Cluster A	
Foreign Language 203	3
Foreign Language 204	3
Other Electives (2 disciplines, non-foreign language)	6

LSP Cluster B
PSYC 101 *Introduction to Psychology* 3
SOCA 101 *Introduction to Sociology* 3
ECON 201 and 202 *Principles (BFL students only)* 6
LSP Cluster C
MATH 150 or MATH 155 *Introduction to calculus*** 3-4
ECON 225 *Statistics* 3
CS 101 *Introduction to Computer Applications* 4
Lab science course 4
Subtotal **50-52**

Required College of Business and Economics core courses
(Identical for all majors, see page 66 in this catalog.)
College core less ECON 201, 202, and 225 above **27**

Required Business and Economics Major Courses and Unrestricted Electives*
(Varies by majors.) **30**

Required Arts and Sciences courses
Fine arts requirement (see Arts and Sciences section) 3
International studies requirement (see Arts and Sciences section) 3
Subtotal **6**

Foreign Language Requirements***
LING 311 3
Foreign Language 301 3
Foreign Language 302 3
Foreign Language 303 3
Foreign Language 304 3
Foreign Language required culture course 3
FRCH 431 *or* FRCH 432
GER 341 *or* GER 441
RUSS 451
SPAN 330 *or* SPAN 340
Foreign Language required literature course 3
FRCH 331 *or* FRCH 332
GER 331 *or* GER 332
RUSS 331 *or* RUSS 332
SPAN 331 *or* SPAN 332 *or*
SPAN 341 *or* SPAN 342
Foreign Language upper-division electives in the major 9
Foreign Language capstone experience (PR: 21 hrs. of upper-division coursework in the foreign language major) 3
Subtotal **33**
Internship (or substitute 10-12 hours of approved coursework)
ACCT, FIN, MANG, MKTG *Internship* 3
ACCT, FIN, MANG, MKTG 299 *Independent Study* 3
Foreign Language upper-division in the major 6
Subtotal **12**
Minimum total hours for the degree **158**

*The specific upper-division business courses are determined when the student is admitted to the College of Business and Economics at the beginning of his or her junior year.
**Although the College of Business and Economics requires MATH 124 and 150, students are encouraged to substitute MATH 155 and 156 or MATH 129 and 155 for MATH 124 and 150 in preparation for graduate admission examinations and higher-level business and economics courses.
***Students must complete a minimum of 15 upper-division hours of coursework in the target foreign language on campus. They must achieve a minimum grade point average of 2.25, both overall and in the foreign language major, for graduation.

Forensic Identification

Forensic and Investigative Science

Michael Yura, Forensic Identification Program Director
Clifton Bishop, Forensic and Investigative Science Advisor and Curriculum Coordinator

Degree Offered

Bachelor of Science in Forensic Identification (B.S.F.I.)

Nature of Program

The Forensic Identification program comprises two majors: latent fingerprint identification and biometric systems. Three areas of emphasis are available to students in Forensic and Investigative Science (FIS) (formerly latent fingerprint identification: forensic examiner, DNA-biology, and chemistry.) Each provides a strong background in the physical and biological sciences associated with forensic identification, such as effective methods of collecting, processing, and identifying trace evidence from crime and disaster scenes. These courses of study were developed through the efforts of the Federal Bureau of Investigation (FBI) and WVU in cooperation with professional associations such as the International Association for Identification (IAI). The program draws on faculty expertise in a variety of disciplines including art, biology, biochemistry, chemistry, computer science, law, pharmacology, pharmacy, physics, and others. Students completing the program will earn a bachelor of science in forensic identification (B.S.F.I.) conferred by the Eberly College of Arts and Sciences. The biometric systems major is offered through the College of Engineering and Mineral Resources and is described in that section of the catalog.

Admission Requirements

Students interested in the FIS program will be admitted as pre-program majors as freshmen and sophomores. Strong high school preparation in biology, chemistry, physics, algebra, trigonometry, and pre-calculus is recommended. Computer literacy is also strongly recommended. Students who wish to enter the program must apply for admission and must have completed or be enrolled in courses listed below under the pre-program requirements. Because of the individualized instruction in classrooms, laboratory courses, and internships, enrollment is limited. Applicants must have a minimum cumulative GPA of 2.75 in the pre-program requirements and no less than a C in any required course. Other requirements include strong letters of recommendation focusing on personal integrity and character. In accordance with the unique nature of the program, a statement related to a drug-free lifestyle is required. Following the submission of all appropriate data, the Forensic Identification Admissions Committee will interview qualified students. Admission to the limited number of places in the three FIS areas of emphasis will be on a competitive basis. Prior to applying for acceptance into the major (typically done at the end of the sophomore year), transfer students must have completed or be in the process of completing a one-year residency at the WVU Morgantown campus. Students must have completed or be enrolled in FIDP 201 *Introduction to Forensic Science*. Additional information and criteria for selection are available from the program areas.

Degree Requirements

The first two years of the program are identical for all students and provide a preparatory curriculum shared in part with the biometric systems major (listed in College of Engineering and Mineral Resources). The first two years of study are virtually identical to that taken by biology, chemistry, and other majors allowing for easy transition to one of these majors should the student elect not to pursue a degree in forensics. The final two years are composed of specific courses related to the chosen area of emphasis as well as courses taken by all FIS students. Courses taken by all students include *Court Testimony* (FIDP 406), *Evidence and Law* (FIDP 404), *Drugs and Medicines* (PHAR 249), *Laboratory Quality Assurance* (METC 191), *Technical and Scientific Writing* (ENGL 305), *Forensic Journal Club* (FIDP 408), and the *Forensic Capstone* (FIDP 410) course. Additionally, all students will participate in area-appropriate *Internship* (FIDP 386) courses.

Specialized courses in the forensic examiner area of emphasis, for instance, include *Science and Technology of Fingerprints* (FIDP 301), *Latent Fingerprints* (FIDP 304), *Crime Scene Investigation 1 and 2* (FIDP 302 and 402), *Forensic Photography* (ART 335), and *Trace Evidence/Blood Splatter Analysis* (FIDP 409). A four-year plan of study for each area of emphasis is available from the academic advisor.

Required Pre-Program Coursework

Pre-program courses include: BIOL 115, 117, and 219; CHEM 115, 116, 233, 234, 235, 236; CS 101; ENGL 101 and 102; MATH 155 and 156; PHYS 101 and 102; PSYC 101; SPA 270; STAT 215; and FIDP 201.

Internship

Upon satisfactory completion of the junior year, the student will submit an application for placement in an approved internship site. The placement coordinator will submit the student's internship application materials to the requested site(s) for review. The host agency reserves the right to reject any student's application. The anticipated length of internships will be twelve weeks but may vary depending upon the host facility. The supervisor will submit an evaluation form to the faculty member responsible for grading the student. Because of the competency nature of the internships, an S (satisfactory) or U (unsatisfactory) will be submitted as the internship grade.

Performance Requirements

Students must maintain a minimum overall GPA of 2.75 and complete all required courses each term with a grade of at least a C (or P in courses offered only on a pass/fail grading basis or S in courses offered on a satisfactory/unsatisfactory grading basis); required courses offered for a letter grade that students have chosen to take on a pass/fail basis cannot be applied to the degree. A student who does not meet these requirements may be placed on probation, suspended, or dismissed from the program. The forensic identification program reserves the right to suspend or dismiss any student who does not perform at an overall level considered satisfactory. WVU reserves the right to modify the program as needed. The information contained herein is presented as a general guide to assist students in preparing their course of study. Students should work closely with the program's advisor when registering for courses to assure that program requirements are being met.

Suggested Curriculum

First Year

First Semester	Hrs.
BIOL 115	4
CHEM 115	4
MATH 155	4
SPA 270	3
Total	**15**

Second Semester	Hrs.
BIOL 117	4
CHEM 116	4
ENGL 101	3
MATH 156	4
PSYC 101	3
Total	**18**

Second Year

First Semester	Hrs.
BIOL 219	4
CHEM 233/235	4
CS 101	4
STAT 215	3
Cluster Elective	3
Total	**18**

Second Semester	Hrs.
CHEM 234	3
CHEM 236	1
FIDP 201	3
PHYS 101	3
ENGL 102	3
Cluster Elective	3
Total	**16**

Third- and fourth-year courses are determined by the student's selected area of emphasis (forensic examiner, forensic biology, forensic chemistry, or forensic toxicology).

Geology and Geography

Trevor M. Harris, Chair
Thomas Wilson, Associate Chair in Geology
Kenneth C. Martis, Associate Chair in Geography

Degrees Offered

Bachelor of Arts
Majors: Geography, Geoscience

Bachelor of Science
Major: Geology

Geology

Bachelor of Science

The bachelor of science degree is designed for students interested in geology positions within either the private or public sector, as well as for students who will pursue graduate work. Qualified students are encouraged to seek a graduate degree; however, B.S. geologists who have developed solid technical and communication skills have excellent employment prospects in environmental and geotechnical firms.

Candidates for the bachelor of science are required to take a total of 40 hours of geology courses. Students are urged to take supporting courses in such fields as geography, mining and petroleum engineering, hydrology, soil mechanics, soil science, biology, and computer science, depending on their primary interest within geology. Students planning to attend graduate school in geology or seek employment in the petroleum industry should complete a full year of calculus.

Instructional facilities and equipment include laboratories for mineralogy, petrology, geochemistry, sedimentology, paleontology, hydrogeology, geophysics, geomorphology, mineral and fuel resources, and structural geology. Field studies are stressed in upper-level classes, capped by a six-credit field course examining folded and faulted sedimentary rocks as well as igneous and metamorphic rocks in South Dakota, Wyoming, and Montana. Other recent field classes have focussed stratigraphy in Spain and Ireland and the geomorphology, structural geology, and petrology of the American and Canadian Rockies. A wide variety of resources are available to augment classroom learning, including cooperative research programs with the West Virginia Geological and Economic Survey, the National Energy Technology Laboratories of the U.S. Department of Energy, the West Virginia Department of Natural Resources, Monongahela National Forest, and numerous private geoscience firms. Internships are encouraged to broaden the learning experience and to enhance employment prospects.

Bachelor of Science Requirements

A total of 128 hours is required including 40 hours of geology courses (excluding GEOL 203 and 351).

Required Courses for a B.S. with a major in geology: GEOL 101, 102, or 110, 111 (or GEOG 110, 111), 103, 104, 284, 285, 311, 321, 331, or 341, 404, 454, 463, and five hours of upper-division geology electives; CHEM 111 and 112, or 115 and 116; PHYS 101 and 102, or 111 and 112; STAT 211; MATH 126 and 128; MATH 155 and GEOL 351, or MATH 155 and 156.

Recommended electives: GEOL 455, 470, 472, 473; GEOG 205, 207, 350, 452, 455; CS 101; AGRN 202 and 203; additional biology, chemistry, physics, soil science, or mathematics courses.

An average of at least 2.0 must be attained in required upper-division geology courses.

Admission Requirements

Admission to the program requires at least a cumulative GPA of 2.0 and an average of at least 2.0 in lower-division geology courses.

Minor in Geology

Anyone interested in a geology minor is urged to contact the department.

Requirements for the Minor: Sixteen hours of geology courses including GEOL 101 and 102, or GEOL 110 and 111 are required. Nine hours must be upper division. Students must achieve a grade point average of at least 2.0 in all geology courses. Courses graded P/F may not be applied toward the geology minor.

Environmental Geoscience

Bachelor of Arts

The B.A. in environmental geoscience is a joint program in the Department of Geology and Geography for students interested in geological and geographical approaches to environmental issues. Emphasis is placed on the physical, human, and spatial aspects of Earth and its environment. The broad and interdisciplinary nature of the degree program is designed to produce geoscientists who can identify environmental problems, apply a variety of approaches to their remediation, and be conversant among the wide range of disciplines for whom the environment is of special concern.

The course requirements for the degree reflect the diversity of environmental problems that we face today from the atmosphere (air pollution), to the hydrosphere (water pollution), to the lithosphere (ground pollution), and how these problems affect our quality of life. The courses required for the degree also reflect the increased demands placed upon modern environmental scientists that include being able to recognize and understand the sources and impacts of various pollutants within the physical environment, being able to compile and analyze environmental data, understanding the regulatory aspects of environmental protection, and being able to effectively communicate issues of importance with other environmental scientists and with the general public.

Graduates of this program will find employment in a wide array of fields including the assessment and remediation of environmental problems, land-use planning, geographic information systems, involvement in the legislative process by which laws are formulated to protect the environment, the application of such laws as part of a federal or state regulatory agency, or as a member of the journalistic community using the various methods of mass communication to increase the public awareness of situations that adversely affect the environment.

Geology and Geography Courses

The program requires a total of 128 hours for graduation. A minimum of 35 hours must be taken from the following list of geology and geography courses including the 23 required hours plus a minimum of 12 hours at the 200, 300, or 400 level selected from the elective list. No more than 50 hours of geology/geography courses can be used for the B.A.

The selection of courses from the following lists are designed to provide competence within four important areas of understanding required for an environmental geoscientist: (1) a firm understanding of the physical makeup of the environment including the atmosphere, the hydrosphere, and the lithosphere, (2) a familiarity with the tools with which the environment can be described and evaluated, (3) an understanding of how humans have impacted the environment, and (4) the steps that can be taken to protect the environment and, if already adversely affected, what can be done to ameliorate the problem.

Required Courses (23 hours) GEOL/GEOG 110, 111 (or GEOL 101, 102), 103, 104, 200, 400*; GEOG 106, 107, 307.

Elective Courses (12 hours) GEOG 205, 207, 300, 305, 350, 415, 453, GEOL/GEOG 201, 321, 452, 455. GEOL 203, 365, 463, 484, 488.

Required Courses Outside the Department (14 hours) CHEM 111, 112, or 115, 116 or CHEM 111 and PHYS 105; MATH 126, 128.

*Used to fulfill the college writing course requirement.

Restricted Electives (15 hours) ARE 187, 220, 382; AGRN 202, 203, 255; BIOL 101, 102, 103, 104, (or 115, 117), 105, 106; CHEM 231; CS 101, 110; FMAN 212; HIST 284; MATH 150, 155*; POLS 338; STAT 211, 312.

* Credit cannot be obtained for both MATH 150 and MATH 155.

Geography

Nature of Program

The undergraduate major in geography provides students with the knowledge and skills needed to analyze the variation in human activity that exists among places, regions, and countries. This knowledge allows geographers, for example, to explain why some places are more or less developed than others, to suggest ways in which development can be planned, and to examine the relationship between the natural environment and human activities.

Geography students receive specialized training in one of the program's four options: geographic information science (GIS), planning and development, natural resources and environment, and international area studies. An individualized program of study is also available combining elements of the four options. Geography graduates are qualified for a number of careers in both the private and public sectors. In industry, geographers are hired as geographic information systems analysts, business location researchers, environmental impact consultants, market analysts, and cartographers. In government, geographers can work as local urban planners, regional and state economic development specialists, environmental and resource development analysts, land-use planners, international development agency advisors, teachers and trainers, researchers, cartographers, and geographic information system analysts. Some graduates may also use their training to pursue careers as environmental or community activists in non-profit organizations. Finally, many geography students go on to graduate school to obtain further training, most commonly in geography or planning, but also in fields as diverse as law, information science, and environmental studies.

Admission and Degree Requirements

Admission to the geography program requires a cumulative grade point average of at least 2.0 and an average of at least 2.0 in geography courses. A geography major requires a total of 128 hours, including 33 hours of geography courses.

Core requirements (14 hours) GEOG 102 *World Regions,* 106 *Physical Lab,* 107 *Physical,* 108 *Human,* 199 *Orientation,* and 240 *U.S. and Canada.*

Core elective requirements (3 hours) 205 *Natural Resources,* 209 *Economics,* 210 *Urban.*

Methods and applications (3 or 4 hours) 350 *Introduction to GIS,* 462 *Digital Cartography,* 455 *Remote Sensing,* 494A *Field Biogeography.*

Capstone Course (3 hours) 492 *Professional Field Experience,* 495 *Independent Study,* 496 *Senior Thesis,* 499 *Honors Thesis.*

Areas of Emphasis

Geographic Information Science (GIS)

This option provides a foundation in the theory and practice of geographic data handling, emphasizing the use of computer systems for storing, retrieving, analyzing, and displaying spatial information. Geographical analysis of human and natural environments generates information for decision-makers in business, government, and educational settings using contemporary technology such as geographic information science (GIS), image processing of remotely sensed data, and geographical models. The GIS option provides instruction in the capture of data from field survey, aerial photography, satellite imagery, and other digital sources. The significance of spatial patterns and processes are understood through mapping, computer-oriented techniques, and statistical applications. The department has state-of-the-art laboratories and computer software for practical training and education in GIS and remote sensing.

Recommended Courses GEOG 300, 361, 362, 415, 452, 453, and 455. Suggested courses in other disciplines: FOR 140, 326; MATH 155, 156, 251, 261; STAT 211, 215, 312, 331, 421, 445; CS 101, 110, 111, 220, 210, 330, 415, 440, 470; HIST 284; ART 111, 112, 223; IMSE 350; CE 200, 205, 405; PHYS 108.

Natural Resources and Environment

A rapidly expanding interest in the environment and sustainable development has put geographers in a good position to analyze the destruction of and measures to maintain environmental systems. This option emphasizes the interaction between natural resources, the physical environment, and economic development in developed and developing regions. It provides training for students interested in problems concerning the conservation of natural resources, environmental impact on economic development, and strategies for sustainable resource utilization. Geographical information science, remote sensing, and cartographic training is available for analyzing environmental problems resulting from the exploitation and management of energy, mineral, land, and water resources. Theoretical issues concerning political ecology are also provided.

Recommended Courses GEOG 110 and 111, 300, 321, 352, 411, 415, 455, 491, and 530. Suggested courses in other disciplines: GEOL 101, 102, 103, 104; BIOL 363; CHEM 111, 112; CE 200; ENGL 305; FOR 140, 326; HIST 284; MATH 128; POLS 336, 338; STAT 101; CS 101.

Planning and Development

The planning and development option emphasizes urban planning, rural planning, and regional development, preparing students to participate in the social processes that influence contemporary urban and regional development. Students are exposed to issues such as equity vs. efficiency, planning from above or below, community development, uneven development, third world planning, land-use planning, gentrification and urban revitalization, gender studies, rural planning, and policy formation. The training provided in this track will equip students with a background for careers or advanced study in economic development, urban or regional planning, industrial development, community organization, and environmental planning. In addition, students are strongly encouraged to participate in the internship program to give them practical experience in their field of interest. Finally, students in this option follow an urban, rural, or regional development track or may construct their own program that includes courses from each track.

Urban Planning Recommended courses: GEOG 412, 425, 491, and a regional course from either 241 or 243. Suggested courses in other disciplines: ECON 462; POLS 220; SOCA 322.

Regional Development Recommended courses, GEOG 309, 411, 412, 491, and two regional courses, 241 and 243. Suggested courses in other disciplines: ECON 461; POLS 220; SOCA 323.

International Area Studies

The international arena has changed dramatically in recent decades with political transitions, economic restructuring, and social upheaval. Geography plays an important role in analyzing these global shifts. The international area studies option gives students the opportunity to specialize in one or more regions of the world and gain a basic background in international economic, political, and cultural relationships. The program not only deals with specific regional problems, but also global issues, nationalism, development, the international division of labor, and gender issues. The program has particular expertise in western and southern Africa, East Asia, and Europe. Recommended courses: GEOG 241, 243, 302, 310, 412, 415, 491. Suggested courses in other disciplines: ECON 201, 202, 451, 454, 455; ENGL 305; HIST 104,105,106, 464; POLS 103, 250, 260, 361, 364; SOCA 255, 256; MDS 126.

Individualized Program of Study

With the approval of the undergraduate coordinator a student may design an individualized program of study consisting of a minimum of 33 hours of geography courses. The individualized program is arranged with the student's advisor. It shall comprise no more than six hours of Geography 491 and 492.

Internship

An internship is a field-based academic option that uses the workplace as an extended classroom/laboratory. As part of the internship, students usually spend several summer months or a semester working at a public agency, private business, or in some cases a non-profit organization where they are supervised by experts in such areas as GIS, planning, the physical environment, international affairs, or economic development. The professional learning experience is recommended for majors in geography with at least 45 total credit hours and 12 credit hours in geography. See the geography internship advisor for additional information.

Geography Minor

Any student admitted to a degree program at WVU may complete a minor in geography. The minor consists of 15 hours of coursework and is available in five areas: geographic information science (GIS), planning and development, natural resources and environment, international area studies, and an individualized program. Students must achieve a GPA of at least 2.0 in the 15 hours taken for the geography minor. Requirements include GEOG 102 or 108, 107, and nine additional hours in courses related to the student's specific area.

Honors Program

Qualified students in geography are encouraged to participate in the department's honors program, which begins in the senior year and culminates in an individual senior thesis. Entry requires a 3.3 overall GPA.

History

Robert M. Maxon, Chair
Steven M. Zdanty, Associate Chair and Director of Graduate Studies
William S. Arnett, Director of Undergraduate Studies
Mathew A. Vester, Phi Alpha Theta Advisor

Degree Offered

Bachelor of Arts

Program Objectives and Goals

The Department of History offers courses focusing on a variety of world regions and time periods. Degree requirements insure that majors obtain an acquaintance with the history of several such regions and periods and that they develop skills in research and writing. Majors and non-majors may qualify for membership in Phi Alpha Theta, the national history honorary.

Admissions and Degree Requirements

In their freshman and sophomore years, those selecting a major in the department are classified as pre-history. They may be admitted to the major upon the completion of 58 hours with an overall grade point average of at least 2.2. Majors should also have attained at least a 2.2 average in history courses. To graduate, majors must meet University and college requirements for the bachelor of arts. The department requires the following:

- History majors must complete a total of 33 hours in history courses. They must choose 12 hours from the following introductory courses: HIST 101, 102, 104, 105, 106, 108, 152, 153, 179, 180, 271, and 272. They must complete History 494 and 18 additional hours beyond the introductory courses with nine hours each from two of the following three areas: United States and Latin America; Africa, Asia, Europe, and history of science and technology. At least six or the 18 hours must be at the 400 level. One course must be taken in African, Asian, or Latin American history.

- History majors must complete a formal minor of at least 15 hours in a related field outside history but within the Eberly College of Arts and Sciences. With approval of the student's advisor, a minor outside the college may be offered as prescribed by that department or college.
- History majors must achieve a 2.2 GPA for all courses attempted in the major subject and at least a C in each history course attempted.

Minor in History

Any student may take a minor in history. A minor consists of any 15 hours of courses in history. Six hours should be chosen from the following introductory courses: HIST 101, 102, 104, 105, 106, 108, 152, 153, 179, 180, 271, and 272. A minimum of nine hours should be selected from other history courses. Students are advised to design their own history minor to complement studies in their major. Only course grades of C or better can be applied to this minor.

Career Prospects

The bachelor of arts with a major in history is designed to prepare students for careers in teaching, business, and government, and for graduate work in history, law, and related social sciences and humanities.

Program in the Humanities

Richard Montgomery, Coordinator

No Degree Offered

Nature of Program

The study of the humanities is the study of our effort to understand ourselves through history, literature, religion, philosophy, and fine arts. It is also the study of our effort to comprehend the masterpieces of the past and present as we seek to deepen our understanding of ourselves and our culture: what we are, why we are, and what our options for significant life are.

Individualized Major Program

Nicholas G. Evans, Coordinator

Degree Offered

Bachelor of Arts

Major: Interdepartmental Studies

The individualized major provides the undergraduate student an opportunity to arrange an individually tailored program when the educational aims of the student fall between established department or program boundaries. This major is administered directly by the associate dean for undergraduate education of the Eberly College of Arts and Sciences. Students should develop a program during the sophomore year since they are normally expected to embark on this program by the beginning of the junior year. An individualized major typically involves only two or three academic areas—at least one of which must be in the Eberly College—and the program should be planned so that the student attains the academic depth at least matching the depth and rigor of a traditional major.

Following the initial discussion with the associate dean, students should seek counsel with individual faculty members, one of whom will become the student's advisor. The student must submit a formal proposal to the associate dean for acceptance into the program. The student should seek the advisor's assistance with preparation of the proposal, and must then obtain an endorsement from a faculty member in each area of academic concentration; this endorsement should attest to the academic integrity of the student's proposal. The proposal should include (a) a definition of the area of concentration, (b) a statement of the objectives served by the proposed program, and (c) a listing of courses that will constitute the program.

Since its approval in 1972, the individualized major program has attracted a number of interesting and challenging student proposals. Representative examples include a program in religious studies composed of courses in religious studies and communication studies; a psychobiology major that aims at the integration of knowledge about the physiological and psychological mechanisms involved in learning; and a European culture program that combines elements from the Departments of History, Foreign Languages, and Political Science.

More detailed information about the formal proposal is available at 104 Student Services Center.

Industrial Mathematics and Statistics

Sherman D. Riemenschneider, Mathematics Chair
E. James Harner, Statistics Chairperson

Degree Offered

Bachelor of Science
Major: Interdepartmental Studies

Nature of the Program

The curriculum in industrial mathematics and statistics (IMS) will provide students the critical skills and knowledge needed to apply both statistics and mathematics to industrial and scientific problems. IMS is concerned with the mathematical, statistical, and computer modeling of various physical, biological, and social processes. Graduates will be trained to work in business, industry, and the government, or they will be able to pursue a graduate degree in any of the mathematical sciences. Industrial mathematics and statistics is vital to our economic competitiveness and is critical to the development of our increasingly scientific/technological society.

Industrial mathematics and statistics is built on a foundation of differential/integral calculus, differential equations, applied probability, and statistics.

The mathematical tools encompass linear algebra, numerical analysis, continuous models rooted in differential equations, and discrete models linked to finite mathematical structures and Markov processes. Scientific computing extends the rudiments of programming into data visualization, the development of algorithms, and selected topics using high-level languages. Statistical topics especially relevant to industrial and scientific applications include design and analysis of experiments, statistical models, sequential analysis, reliability models, and time series analysis. These statistical methodologies are grounded in fundamental concepts of statistics and probability such as discrete and continuous probability distributions, stochastic processes, estimation and hypothesis testing, and exponential family models.

Performance Requirements

To maintain industrial mathematics and statistics major status and to graduate, students must maintain at least a 2.0 overall GPA and a 2.0 cumulative GPA in coursework in mathematics and statistics.

Degree Requirements

A total of 128 hours is required for graduation. The industrial mathematics and statistics curriculum includes the following required background courses (19 hours): MATH 155, 156, 251, 261, and STAT 215. The IMS program has the following core courses (12 hours) that all students must take: MATH 441 and *Mathematical Modeling* (the proposed MATH 463); STAT 312 and 461.

The student then has the option of selecting a mathematics or a statistics emphasis (nine hours):

M*athematics emphasis:* MATH 420 plus one mathematics and one mathematics or statistics course from the list of recommended electives below, or other department-approved courses.

Statistics emphasis: STAT 313 and STAT 445 or STAT 462 plus one mathematics or statistics course from the list of recommended electives below, or another department-approved course.

The required capstone experience for the IMS program requires the following courses: one hour of STAT 482 or MATH/STAT 491 or MATH/STAT 495; one hour of MATH/STAT 494; one hour of MATH/STAT 496. These courses should be taken during the student's senior year.

Students must also satisfy all requirements of the ECAS bachelor of science. For IMS students interested in computer science, the following normally restricted courses are available to IMS majors: CS 110, 111, 210, 220, 250, 320, and 330.

Recommended Electives

The recommended electives in mathematics and statistics are: MATH 283, 364, 420, 456, and 465; MATH/STAT 222; STAT 217, 313, 316, 331, 421, 445, and 462.

International Studies

Joe D. Hagan, Director
R. Scott Crichlow, Advisor
Jamie E. Jacobs, Advisor

Degree Offered

Bachelor of Arts
Major: Interdepartmental Studies

Nature of The Program

The bachelor of arts major in international studies provides knowledge of world affairs, helps to develop an understanding and appreciation of other cultures and societies, and promotes informed analysis of global interdependencies. The program establishes a basis for careers in international administration and services, business and commerce, government, law, research, and education.

Admission Requirements

Admission to the degree program may be requested upon completion of 58 hours with a cumulative grade point average (GPA) of at least 2.0.

Degree Requirements

The international studies major is composed of internationally-oriented courses drawn from several disciplinary and interdisciplinary study areas. Students take courses from such departments as economics, foreign languages, geography, history, political science, and sociology. Students majoring in international studies initially take a variety of general introductory courses and then focus on a specific area of emphasis with more advanced courses.

Introductory Core The introductory core is intended to introduce students to various perspectives on international affairs and prepare them for advanced study in the major. Required: ECON 201 and 202; INTS 199. Nine hours (three courses) from the following courses: ENGL 139; FLIT 113, 114, 115, 116, 117, 118; GEOG 102, 107, 108; HIST 102, 104, 105, 106, 108, 180; HUM 105, 120; MDS 126; POLS 103, 250, 260; SOCA 105.

Area of Emphasis Majors are required to select an area of emphasis for specialized advanced study. The international studies program offers two areas of emphasis: regional tracks and international affairs tracks. Although students typically choose a single area of emphasis among either the regional or international tracks, it is possible and often valuable to combine an international track with a track on a specific geographical region.

Regional areas of emphasis offered in the program are Africa/Middle East, the Americas, Asia, and Europe. Students pursuing a regional area of emphasis are expected to take extensive language training as well as courses dealing with the culture, politics, and history of the region as well its social and economic problems. Foreign study is encouraged as part of each area of emphasis and such coursework is typically counted towards the

major's requirements. Each area of emphasis provides expertise necessary for government or private sector careers centered around a broad understanding of a particular geographical region. This coursework is also appropriate for entry into graduate programs leading to an M.A. in international affairs with a regional emphasis. The requirements for the regional tracks are as follows:

Africa and the Middle East Required: FRCH 301 and 302; or GER 301 and 302. Twelve hours (six courses) from the following courses: ECON 451, 454, 455; FRCH 303, 304; GEOG 302, 310; GER 303, 304; HIST 464; POLS 361, 364, 368; SOCA 322; WMST 245. eighteen hours (six courses) from the following courses: FLIT 266; GEOG 243, 411; HIST 427, 428, 429, 430, 433, 434; MUSC 477; POLS 356, 358; RELG 232; SOCA 256.

The Americas Required: SPAN 301 and 302. Twelve hours (four courses) from the following courses: ECON 451, 454, 455; GEOG 302, 310; HIST 463, 464; POLS 361, 364, 368; SOCA 322; SPAN 303, 304; WMST 245. Eighteen hours (six courses) from the following courses: FLIT 251, 252, 266, 271; GEOG 240, 411, 466; HIST 241, 242, 409, 410; POLS 355, 367; SOCA 255; SPAN 330, 331, 332, 431, 461, 462.

Asia Required: JAPN 301 and 302. Twelve hours (four courses) from the following courses: ECON 451, 454, 455; GEOG 302, 310; HIST 463, 464; JAPN 303, 304; POLS 361, 364, 368; WMST 245. Eighteen hours (six courses) from the following courses: FLIT 221, 222; GEOG 411; HIST 425, 426; PHIL 350; POLS 350, 354, 369; RELG 231.

Europe Required: FRCH 301 and 302; or GER 301 and 302; or RUSS 301 and 302; or SPAN 301 and 302. Twelve hours (four courses) from the following courses: ECON 451, 454; FRCH 303, 304; GEOG 302, 310; GER 303, 304; HIST 464; POLS 361, 364, 368; RUSS 303, 304; SPAN 303, 304. Eighteen hours (six courses) from the following courses: FLIT 211, 212, 231, 232, 241, 242, 243, 261, 262, 263, 273, 274, 433, 434, 435; FRCH 331, 332, 432, 461, 462, 534, 535, 635, 636; GEOG 241, 411; GER 331, 332, 341, 361, 362, 433, 434, 435, 441, 545, 547; HIST 205, 207, 209, 217, 218, 221, 232, 405, 406, 407, 408, 410, 413, 414, 417, 418, 419, 420, 421, 422, 431, 432, 446; POLS 351, 353, 366; RUSS 341, 342, 451; SPAN 340, 342, 441, 461, 462.

International areas of emphasis encompass four aspects of contemporary global affairs: international business, international development, international environment, and diplomacy and national security. Coursework in these areas emphasize general international affairs courses as well as certain general "skills" courses that provide background into the more technical aspects of these issues areas. Along with appropriate study abroad programs, students in these areas are encouraged to pursue internships in the policy making or business community in Washington, D.C., the United Nations, or in foreign countries. These four international tracks are designed to provide the background for careers in government (e.g., the various national security bureaucracies as well as agencies dealing with development and the environment) and/or the private sector (e.g., multinational corporations as well as non-governmental agencies dealing with international policy). The requirements for the international tracks are as follows:

International Development Required: GEOG 302; POLS 240, 300 or SOCA 311; STAT 211. Eighteen hours (six courses) from the following courses: ACCT 201, 202; ECON 451, 454, 455; GEOG 310; HIST 464; POLS 361, 364, 368; SOCA 322; WMST 245. Eighteen hours (six courses) from the following courses: GEOG 243, 309, 411, 412, 466; HIST 242, 409, 411, 425, 428, 430, 433, 434; POLS 354, 355, 356, 358; SOCA 255, 256.

International Business Required: ACCT 201, 202; ECON 225, 451, 454. Twelve hours (four courses) from the following courses: BUSA 320, 330, 340; ECON 455; GEOG 302, 310; HIST 464; POLS 361, 364, 368; SOCA 322; WMST 245. Nine hours (three courses) from the following courses: FRCH 461, 462; GEOG 240, 241, 243, 309, 411, 412, 466; GER 361, 362; HIST 209, 214, 218, 221, 242, 409, 410, 411, 414, 418, 420, 422, 425, 426, 428, 430, 433, 434; POLS 350, 351, 353, 354, 355, 356, 358, 366, 367, 369; SOCA 255, 256; SPAN 461, 462.

International Environment Required: BIO 105; GEOG/GEOL 110; POLS 261. Fifteen hours (five courses) from the following courses: ECON 451, 454, 455; ENVP 155; FOR 425; GEOG 205, 302, 310, 415; POLS 338, 364, 368; WMAN 150; WMST 245. Twelve hours (four courses) from the following courses: GEOG 240, 241, 243, 309, 411, 412; HIST 209, 214, 218, 221, 242, 409, 410, 411, 414, 418, 420, 422, 425, 426, 428, 430, 433, 434; POLS 350, 351, 354, 355, 356, 358, 366, 367, 369; SOCA 255, 256.

Diplomacy and National Security Required: GEOG 302; POLS 300 or SOCA 311, POLS 368; STAT 211. Twelve hours (four courses) from the following courses: ECON 451, 454; GEOG 310; HIST 463, 464; POLS 310, 361, 364; SOCA 345; WMST 245. Twelve hours (four courses) from the following courses: GEOG 240, 241, 243; HIST 209, 214, 218, 221, 242, 409, 410, 411, 418, 420, 422, 425, 426, 428, 430, 433, 434; POLS 350, 351, 353, 354, 355, 356, 358, 366, 367, 369; SOCA 255, 256.

Academic Advising

All international studies pre-majors and majors, including students enrolled in the University Honors Program, are advised by designated faculty in the International Studies Program.

Capstone Requirement

All international studies majors must complete INTS 488 to meet the University-wide capstone requirement for graduation. This requirement can be satisfied through a variety of programs: a study abroad experience, an internship, or participation in a course structured around an international simulation, e.g., Model United Nations, Model Organization of American States, or a foreign policy crisis decision making. Each of these activities is to include a project in which a student employs analytic skills from several of the disciplines that make up international studies.

Minor in International Studies

Any student admitted to a major program other than international studies may complete a minor in international studies. Toward this minor, students must satisfy the following requirements:

Completion of one upper-division course (three hours) outside the discipline of the major, selected from the advanced core cluster of courses in international studies: ECON 451, 454; GEOG 302, 310; HIST 463, 464; POLS 250, 260, 364, 368.

Completion of four upper-division courses (12 hours) outside the discipline of the major, in one of the following areas in international studies. In each area of emphasis, courses must be taken in at least three departments. This requirement is intended to broaden students' awareness of their areas of emphasis in the minor, beyond the perspectives of single academic disciplines. For the purposes of international studies, all FLIT and foreign language courses are treated in one department.

Africa and the Middle East ECON 455; GEOG 243, 411; HIST 427, 428, 429, 430, 433, 434; MUSC 477; POLS 356, 368; RELG 232; SOCA 256; WMST 245.

The Americas ECON 455; FLIT 251, 252, 266, 271; GEOG 240, 411, 466; HIST 241, 242, 409, 410; POLS 355, 367; SOCA 255; SPAN 330, 332, 431, 461, 462, 494; WMST 245.

East Asia ECON 455; FLIT 221, 222; GEOG 411; HIST 425, 426; PHIL 350; POLS 350, 354, 369; RELG 230, 231; WMST 245.

Europe. FLIT 211, 212, 231, 232, 241, 242, 243, 261, 262, 263, 273, 274, 433, 434, 435; FRCH 331, 332, 432, 461, 462, 534, 535, 635, 636; GEOG 241, 411; GER 331, 332, 341, 361, 362, 433, 434, 435, 441, 545, 547; HIST 205, 207, 209, 217, 218, 221, 232, 405, 406, 407, 408, 410, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 431, 432, 446; POLS 351, 353, 366; RUSS 341, 342, 451; SPAN 340, 342, 441, 461, 462; WMST 245.

International Development ECON 455; GEOG 243, 309, 411, 412, 466; HIST 242, 409, 411, 425, 428, 430, 433, 434; POLS 354, 355, 356, 358; SOCA 255, 256; WMST 245.

To complete the minor successfully, students must achieve a grade point average of 2.0 in approved international studies courses. Courses graded P/F may not be applied to the international studies minor.

Liberal Arts and Sciences Major

Richard Montgomery, Coordinator

Degree Offered

Bachelor of Arts
Major: Interdepartmental Studies

Nature of Program

The acceptance of liberal arts and sciences graduates into graduate and professional schools, and in government, commerce, and industry, is growing. This recent upsurge in the popularity of liberal arts and sciences graduates is based on the recognition that their program of study prepares them to master new knowledge quickly and to integrate that knowledge into a broad existing knowledge base.

In order to gain a broad knowledge base and develop skills in learning, critical thinking, and effective communication, majors in liberal arts and sciences take extensive coursework in all three traditional areas: natural and mathematical sciences, social sciences, and arts and humanities. Majors also complete an upper-division concentration in an area of their choice, and they meet all University and college requirements.

Admission Requirements

Students may apply for admission to the liberal arts and sciences major after they complete 58 hours of coursework, including Math 126 and MDS 103 *Library Science*, with an overall grade point average of at least 2.0.

Degree Requirements

The liberal arts and sciences major requires a minimum of 30 semester hours in each of the three basic cluster areas:

Cluster A Humanities and Fine Arts. At least six hours of the following courses must be at the 300 or 400 level. The remainder may be at the 100 and 200 level. Coursework in these areas must have as its subject matter the understanding, appreciation, or history of the relevant disciplines. Credit will not be given for studio, performance, workshop, or craft courses.

Group I: Art, Music, Theatre, Humanities, English Literature, Foreign Literature in Translation—15 hours of courses.

Group II: History, Philosophy, Religious Studies, Foreign Languages—15 hours of courses. (Courses used to satisfy the Eberly College foreign language requirement may not be used to fulfill this requirement.)

Cluster B Social and Behavioral Sciences. At least six hours of the following courses must be at the 300 or 400 level. The remainder may be at the 100 or 200 level.

Group I: Communications Studies, Psychology, Sociology and Anthropology—15 hours of courses.

Group II: Economics, Geography, Political Science—15 hours of courses.

Cluster C Natural Sciences and Mathematics. At least twelve hours of the following courses must be at the 200 level or above. The remainder may be at the 100 level.

Group I: Mathematical Sciences (Mathematics, Computer Science, Statistics)—15 hours of courses.

Group II: Physical or Life Sciences (Physics, Chemistry, Geology, Biology)—15 hours of courses.

Concentration

Fifteen hours of coursework, chosen in consultation with a liberal arts and sciences advisor, must be completed. At least twelve of those hours must be at the 300 or 400 level. The courses may be part of a traditional arts and sciences minor; a cluster of courses in another college such as business, journalism, or education; or an individually designed concentration. Courses used to complete the concentration may not also be used to fulfill other requirements for the major.

Capstone Course Requirement

A capstone course must be completed. This course will either be Humanities 492 *Directed Studies*, when offered as the liberal arts and sciences capstone experience, or a capstone course offered by another program or department and approved by the student's advisor. The capstone course will normally be a component of a student's concentration. Students wishing to use Humanities 492 in order to satisfy the liberal arts and sciences capstone requirement must enroll for this course in their senior year.

Mathematics

Sherman Riemenschneider, Chair

Degrees Offered

Bachelor of Arts, Bachelor of Science

Nature of Program

The Department of Mathematics provides a curriculum with programs for:

- An undergraduate major and minor in mathematics.
- The pre-service elementary and secondary teacher.
- Students interested in the applications of mathematics to the fields of computer science, statistics, engineering, physical, natural and social science, and business and economics.
- The non-science major, to explain the ideals and objectives of mathematics.

Admission Requirements

To be admitted to the mathematics degree program, students must have at least a 2.0 overall grade point average (GPA); must have completed MATH 155, 156, and 283 with at least a grade of C in each; and must have at least a 2.5 GPA in all of the required mathematics courses attempted prior to the request for admission. MATH 283 should be taken no later than the sophomore year, and if that course has not been completed with a grade of at least a C, a student may request admission on a provisional basis; the petition should be addressed to the Mathematics Academic Standards Committee.

Degree Requirements

Mathematics majors must complete at least 39 hours of approved courses in the mathematical sciences, plus a capstone requirement. For the bachelor of arts degree and the bachelor of science degree, the required courses are: MATH 155, 156, 251, 283, 343 or 441, 222 or 420, STAT 215 or 461, and two additional upper-division courses. These two courses may be selected from those numbered above 200 with the exclusion of MATH 231, 331, 332, and 455. It may be possible to substitute one of the two additional courses with an upper-division course offered by another department. The content of such a course must be at an advanced level mathematically and its acceptability will require prior departmental approval.

In addition, for the B.A. degree, students must take at least one of MATH 261 and 378 and at least two from MATH 341, 381, 451, 456. For the B.S. degree, students must complete MATH 261 and 451 and take at least one course from MATH 341, 381, 456.

Students completing the B.A. program must complete WVU LSP requirements, Eberly College of Arts and Sciences B.A. requirements, major requirements (above), and electives to total 128 hours.

Students completing the B.S. program must complete WVU LSP requirements, Eberly College of Arts and Sciences B.S. requirements, major requirements (above), and electives to total 128 hours.

Successful completion of the major requires that the student receive at least a grade of C in each of the required mathematics courses presented for the degree, or a cumulative grade point average of at least 2.25 in the courses numbered above 200. An upper-division mathematics course for which the grade is lower than C (including a grade of W) may be

repeated only once. In this case, the second grade is used to compute the mathematics grade point average and determine whether the 2.25 average is satisfied. A student with a valid medical or emergency reason for failing to receive an acceptable grade in two attempts may petition the Mathematics Academic Standards Committee for permission to register a third time.

Recommended Electives

Students should choose a computer science elective so that they can achieve programming proficiency. Programming skills are a prerequisite for MATH 420. Elective courses are selected in consultation with a departmental advisor; they should be based on interests and goals.

Minor in Mathematics

Students who wish to pursue mathematics as a secondary field, either to support another major or to obtain deeper insight into mathematics itself, can receive a minor by successful completion of 24-25 hours of approved courses.

Two tracks lead to the minor. The corresponding required courses are:

Track One MATH 155, 156, 251, 283; at least one course chosen from among MATH 341, 343, 381, 451; two additional courses chosen from those numbered above 300 with the exclusion of MATH 331, 332, and 493.

Track Two MATH 155, 156, 251, 261; at least one course chosen from MATH 375, 420, 456, and 465; and two additional courses chosen from those numbered above 300 with the exclusion of MATH 331, 332, and 493.

The student's interests and goals will determine which plan is most appropriate as well as which electives best meet these interests and goals. The choice should be made in consultation with the student's major advisor; additional information may be obtained from one of the advisors in the Department of Mathematics.

Successful completion of the minor requires that the student receive a grade of at least a C in each of the mathematics courses presented for the minor, or a cumulative grade point average of at least 2.25 in these courses.

Placement into Mathematics Courses

To enroll in a freshman-level mathematics course, a student must demonstrate a satisfactory understanding of background material, either in the prerequisite courses specified in this catalog, on the departmental placement examination, or by suitable ACT/SAT math scores. The placement examination is given during orientation for freshman and transfer students. It is also given on the Saturday before classes begin each semester. Students intending to take the placement examination on the Saturday before classes need to register for the exam prior to the day the test is given. Sign-up sheets are in room 301 or 320, Armstrong Hall. There is no fee for the exam. The placement exam may only be taken once during a four-year period. Students who do not meet the prerequisites will be dropped from their math class during the first week of classes.

Math Learning Center

The Department of Mathematics offers help to students in mathematics courses through its Math Learning Center, located in room 301, Armstrong Hall. The Math Learning Center is a free, drop-in help center for students enrolled in undergraduate math classes through calculus. Hours are posted at the beginning of each semester and announced in mathematics classes. The phone number is (304) 293-7273.

Philosophy

Richard Montgomery, Chair

Degree Offered

Bachelor of Arts

Nature of Program

The word "philosophy" originally meant love of knowledge; now it means the investigation of fundamental questions that have puzzled human beings for ages. Philosophy deals with such questions as: What is the ultimate nature of reality? What do we really know, and how do we know it? What is morally right and how should we live? What is the nature of the human mind and the self? Is there a God, and how might human beings come to have knowledge of God? What is the ideal form of government? Typically, the philosophy student studies the history of basic views about knowledge, the world, and human nature. The student also develops logical skills to deal with specific philosophical issues relevant to life, such as current moral problems.

Philosophy is a discipline that raises questions about the foundations of other disciplines. Thus, within the general field of philosophy, there is the philosophy of science, the philosophy of religion, the philosophy of history, the philosophy of art, and so on. By its nature, philosophy tends to be interdisciplinary. Majors often find that it is helpful to combine the study of philosophy with a concentration of courses in another area.

Those who desire careers in the teaching of philosophy will need the Ph.D. degree. Being a philosophy major is also excellent preparation for advanced study in a number of other areas, including law and business. The philosophy major develops critical reasoning and writing skills and an ability to analyze problems from a variety of perspectives.

Admission Requirements

Students who meet general admission requirements for the University are eligible to become pre-philosophy majors. Upon completion of 58 college credit hours with a grade point average (GPA) of at least 2.0, as well as a GPA of at least 2.0 in all courses completed in philosophy, students are eligible for admission to the degree program in philosophy.

Degree Requirements

A degree in philosophy requires 30 hours in philosophy, including 18 hours of work at the 300 level or above. The following courses are required: PHIL 244, 248, 260, 321 or 346, 301 or 302, and 494 or 496. A grade of C or higher must be earned in required courses, and majors must possess at least a 2.0 average in all philosophy courses in order to graduate. A department advisor will help students select philosophy electives and courses from other departments suited to students' specific educational goals and interests.

Students who wish to use PHIL 496 *Senior Thesis,* in partial completion of the requirements for the philosophy major are dised to begin making preparations early in the semester preceding the one in which they wish to be enrolled for the course. Students should start by contacting a faculty member in the Department of Philosophy with expertise in an area within which they wish to work. Ability to enroll for PHIL 496 will depend upon the availability of a faculty member who is able to work with the student, the students' level of preparation for successful completion of a thesis, and students' submission of an appropriate proposal for the thesis. Philosophy majors who are in the Honors Program can use PHIL 496 in partial completion of the requirements for the honors thesis. Such students are urged to familiarize themselves with Honors Program requirements.

Minor in Philosophy

Any student admitted to an undergraduate degree program at WVU may complete a minor in philosophy. The minor is designed to acquaint students with a broad range of philosophical topics and skills, and to introduce them to the fundamental issues in philosophy. The minor consists of 15 hours in philosophy, with at least nine hours at the upper level (300 level or above).

Pre-Law Area of Emphasis in Philosophy

The course of study for a pre-law philosophy major requires 30 hours in philosophy, including 18 hours of work at the 300 level or above, distributed as follows:

Courses required for all philosophy majors: PHIL 244, 248, 260, 321 or 301, 346 or 302, 494 or 496. Students who wish to enroll for PHIL 496 should follow the guidelines described above.

Additional requirements for Pre-law: PHIL 130, 323, 325, and one elective course.

Physics, Astronomy, and Physical Science

Earl E. Scime, Chair

Degrees Offered

Bachelor of Arts, Bachelor of Science

Nature of Program

There are two degree options for students in physics. The bachelor of science is designed for students committed to a career in research and is typically followed by graduate work in physics, chemistry, materials science, optical sciences, or engineering. Some students accept positions in industry or in a government laboratory immediately after completing the bachelor of science. This degree program provides a comprehensive grounding in the fundamentals of physics and is usually accompanied by participation in one of the active research programs within the department. One important area of emphasis for physics majors pursuing a bachelor of science is computational physics (i.e., a combination of physics and computer science).

The bachelor of arts degree is more flexible. By allowing more free elective choices, it prepares a student for a career that combines a science background with subsequent professional training. Typical career paths for this degree program include secondary education, medical school, patent law, forensics, health, physics, environmental engineering, journalism, government policy, and business management.

The courses in physics provide a mix of theoretical concepts and practical examples. Each course within a degree plan builds upon the knowledge base acquired in previous courses and, together, these courses allow a student to acquire the combination of physical insight and mathematical skill needed for success in today's demanding job markets.

The department also offers introductory survey courses in physics and astronomy which are of interest to a broad range of students in the social sciences, fine arts, humanities, health sciences, and education. These courses use a minimum of mathematics to introduce the principles of physics and they provide many examples from the "real world" of the environment, energy, space, communications, transportation, and medicine.

Admission Requirements

Admission to the bachelor of arts and to the bachelor of science in physics programs requires, in addition to college requirements, at least a 2.5 grade point average in all required introductory physics and mathematics courses (which must include PHYS 111, 112, MATH 155, 156, or their equivalents).

Degree Requirements

The B.A. degree requires a minimum of 128 hours. This includes: 30 hours of University requirements (ENGL 101, 102, LSP A & B); 15 hours of Eberly College of Arts and Sciences requirements (fine arts, language); and 53 hours in physics department requirements (29 in physics, eight in science, 16 in mathematics). Continuance in the program requires that the student maintain at least a cumulative 2.2 GPA in all physics and mathematics courses. Specific course requirements are, in physics: Orientation 199 (physics section), PHYS 111, 112, 314, 331, 333, 341 (2 hrs.), and nine hours of electives. In mathematics: MATH 155, 156, 251, 261. In science: eight hours from biology, chemistry, and/or geology. In addition students have at least 38 hours of unrestricted free electives which can be used to prepare for entry into a professional program (teaching, law, medicine, for example) or into the job market.

The B.S. degree requires a minimum of 128 hours. This includes: 30 hours of University requirements (ENGL 101, 102, LSP A & B); and 71 hours in physics department requirements (44 in physics, eight in science, 19 in mathematics). The student must maintain at least a 2.2 cumulative GPA in all physics and mathematics courses in order to continue in the program. Specific course requirements are, in physics: Orientation 199 (physics section), PHYS 111, 112, 314, 331, 333, 332 or 334, 341 (two semesters), 451, 461, plus 12 hours electives. In mathematics: Mathematics 155, 156, 251, 261, plus one three- hour elective which can be used to prepare for entry into a graduate or professional school (physics, engineering, medicine, etc.) or towards a second degree.

The area of emphasis in computational physics is ideal for those who are interested in computation. This degree provides a strong foundation in scientific computing. It takes the best skills of a physics degree: 1) strong analytical skills, 2) a broad knowledge of the physical sciences, and 3) the fundamental problem-solving skills of physics, and integrates these with the computer skills essential to scientific computing: 1) programming in several languages, 2) experience with different operating systems, 3) data storage and numerical analysis, and 4) the graphics to display complex results. The requirements for this area of emphasis are similar to those of a physics B.S. degree with the addition of the number of computer science courses. In addition to the 32 hours of physics requirements (PHYS 111, 112, 211, 314, 331, 333, 451 or 461, 341 and one additional physics elective), there are 24 hours of computer science requirements (CS 110, 111, 210, 415, 460, and 470). One additional three-hour elective must be chosen from either physics or computer science. All required physics or computer science electives must be from courses at or above the 200 level.

Early departmental advising is recommended in setting up a well-planned program.

Honors Program

Qualified students with a cumulative GPA of at least 3.0 in physics courses may obtain a B.S. in physics with departmental honors by carrying out a physics-related project in addition to the required courses. The project results, in the form of a written report, must be approved by a committee composed of three faculty members chosen by the student, at least two of whom are from the Department of Physics. Students should register for at least two hours of credit in PHYS 493. The undergraduate advisor serves as the departmental director for the Honors Program.

Minor in Physics

The minor is designed to introduce students to the basics of contemporary physics and to acquaint them with the rich diversity of current physics. Students who wish to pursue physics as a second field can receive a minor in physics by successful completion (2.0 average or higher in the physics courses) of PHYS 111, 112, and 314 as well as six credit hours from any physics course or courses numbered 300 or above.

Political Science

Allan S. Hammock, Chair
Robert E. DiClerico, Associate Chair and Director of Undergraduate Studies
Jeffrey S. Worsham, Director of Graduate Studies

Degree Offered

Bachelor of Arts

Nature of Program

The undergraduate curriculum in the Department of Political Science has six main objectives:

- To acquaint students with the nature and role of government in modern society, thus contributing to the general education of the student. In order to achieve this objective, the department offers the general political science emphasis. This emphasis is open to any student who has an interest in political science but who has not yet focused on a specific career goal.

- To impart a basic knowledge and understanding of the public policy-making process, including the techniques used by policy analysts and public administrators. To accomplish this objective, the department offers the public policy and administration emphasis. Students having a desire to work in government and/or to obtain an advanced graduate degree in public policy studies or public administration at WVU, or elsewhere, should enroll in this emphasis. Additional information concerning graduate programs in public administration and public policy (M.A., M.P.A., or Ph.D.) at WVU is in the *WVU Graduate Catalog* on-line at www.ia.wvu.edu:8888.
- To provide pre-professional training for students preparing to enter the legal profession. Students interested in legal careers should enroll in the pre-law and legal studies area of emphasis.
- To develop specialized knowledge in the field of environmental studies for students whose career interests are natural resource management and protection. Students with this interest should choose the environmental studies emphasis as their major option.
- To develop understanding of the international and global dimensions of world and national politics. Students who wish to concentrate their coursework in international relations and foreign affairs as preparation for careers in this area should enroll in the international and world affairs area of emphasis.
- To provide pre-professional training for students who intend to pursue political science as a career. Those who intend to be teachers, researchers, or administrators should plan to enroll in graduate school after completing their bachelor's degrees. The professional political scientist who intends to teach or do applied research in public policy should choose the public policy and administration emphasis. This emphasis will prepare students for the M.A. and Ph.D. with a focus on public policy studies or the M.P.A. with a focus on public administration.

Admission Requirements

Students may apply for admission to the Department of Political Science after completing 58 credit hours with a cumulative grade point average (GPA) of 2.1 or better. In addition, students must maintain a cumulative GPA of 2.0 in order to remain a political science major. Freshman and sophomore students with a 2.0 grade point average may apply as pre-political science majors. Upon admission, each student will be assigned a faculty advisor in the department. Pre-political science majors should enroll in the special orientation class *Orientation to Careers in Law, Politics, and Political Science,* which introduces freshmen and sophomores to the political science faculty, academic requirements, and career opportunities in political science.

Degree Requirements

A cumulative and political science GPA of 2.0 is required for graduation. In addition, no major with an incomplete in a political science course will be certified for graduation.

- Students majoring in political science must take POLS 102, 230 or 240, 250, 260, 270 or 271 and 300 and a minimum of 36 hours total in political science plus the senior capstone course. Courses may be selected from the following fields. American government and politics: POLS 210, 220, 310, 311, 312, 313, 314, 315, 316, 317, 318, 321, 325, 326. Public policy and administration: POLS 230, 240, 331, 333, 334, 335, 336, 338, 342, 344, 530, 531, 536. Comparative government and politics: POLS 250, 350, 351, 353, 354, 355, 356, 358, 551, 555. International relations: POLS 260, 361, 363, 364, 366, 367, 368, 369, 560. Political theory: POLS 270, 271, 372, 373, 375, 379.
- The department also offers courses that deal with the scope of political science and the various techniques employed by political scientists to investigate and analyze political data. POLS 300 is required of all majors.

- Students may also arrange to take selected special courses dealing with a special topic or involving experiential learning. These courses are scheduled on a group or tutorial basis with individual faculty members. Courses available for this type of instruction are POLS 293, 388, 389, 491, 493, and 494. These courses also count toward the 36 hours required in political science. However, no more than six hours of POLS 491 *Field Experience* may count toward the 36-hour requirement. POLS 491 is graded on a pass/fail basis.
- With the exception of the pre-law and legal studies and the government and business emphases, all political science majors must take 12 hours in a secondary field. The choice of a secondary field depends on the interest of the student and the particular emphasis in which the student is enrolled. Secondary fields available include: economics, geography, history, philosophy, psychology, sociology and anthropology, statistics and/or computer science, business, English, journalism, social work, communication studies, mathematics, foreign languages, the natural sciences, and interdepartmental studies. No *Teaching Practicum* may be used to satisfy major or secondary field requirements.
- All majors are required to take ECON 201 and 202.

Areas of Emphasis

Each political science major must enroll in a political science emphasis, depending on his or her academic or career interest. The areas of emphasis and the individual requirements of each are as follows:

General Political Science Emphasis (general liberal arts) Students selecting the general emphasis are expected to take courses that expose them to the full range of the discipline of political science and the other social sciences. Required: POLS 102, 230 or 240, 250, 260, 270, 271 or 300; ECON 201 and 202; 36 hours total in political science courses; six hours from PSYCH 101, SOCA 110, 105, GEOG 102, 108 and PHIL 170; and 12 hours in a secondary field.

Public Policy and Administration Emphasis (public service careers) Students enrolling in the public policy and administration emphasis take courses that prepare them for work in government, non-profit organizations, and selected private businesses. This area emphasizes training in public policy analysis, public administration, selected policy issues (such as energy, environment, and civil rights), and statistical techniques. Required: POLS 102, 220, 230, or 240, 250, 260, 270, 271 or 300; ECON 201 and 202; six hours of policy courses selected from POLS 315, 331, 333, 334, 335, 336, 338; STAT 211 and CS 101; and 12 hours in a policy field or selected secondary field.

Pre-Law and Legal Studies Emphasis (careers in law or criminal justice) Students selecting the legal studies emphasis are required to take a variety of substantive and skills courses which are recognized as valuable background for the study of law. This specialized curriculum is drawn from several departments, including English, philosophy, statistics, accounting, sociology and anthropology, and psychology. Required: POLS 102, 230 or 240, 250, 260, 270, 271 or 300; ECON 201 and 202; nine hours (three courses) from the following law-related courses in political science POLS 210, 312, 313, 314, 315, 344, 363; nine hours (three courses) from the following skills courses CS 101, ACCT 201 and 202, SPA 270, ENGL 201, STAT 211, PHIL 170, 260, ECON 225; and six hours (two courses) from the following substantive courses in law-related disciplines SOCA 232, 233, 330, 331, 334, and 461, PHIL 130, 325, ECON 441 and 445, PSYC 251.

Government and Business Emphasis (careers in government and/or business) Students choosing to enroll in the government and business emphasis take courses that will enable them to develop extensive knowledge of government and politics, government as it relates to business, and introductory knowledge of business principles and practices. Students in this emphasis will target jobs in either the public or private sectors. Required: POLS 102, 230 or 240, 250, 260, 270, 271 or 300, POLS 310, 317, 318, 334; ECON 201 and 202; 12 hrs. from ACCT 201 and 202, MATH 126, 129, 155, 156, 124, 150, ECON 225, STAT 211, and CS 101; nine hours from BUSA 310, 320, 330, and 340; and three hours from SOCA 334, 337, PSYCH 231, and ECON 441, 445, and 481.

Environmental Studies Emphasis (careers in natural resource management and policy) Students in the environmental studies emphasis receive training in the natural sciences and in the politics of natural resource policy and evaluation. Designed for students who anticipate a career dealing with environmental problems, this emphasis requires: POLS 102, 220, 230, or 240, 250, 260, 270, 271, 300, 336, or 338; ECON 201 and 202; MATH 155 and ECON 225; six hours from ARE 220, 382, 410; and 12 hours in either biology, chemistry, or geology.

International and World Affairs Emphasis (careers in international affairs) Students choosing the international and world affairs emphasis specialize in several main sub-fields of the discipline, including international relations, foreign policy analysis, and foreign and comparative governments. This emphasis is one of two options available to students interested in international relations. The Department of Political Science, in cooperation with other departments, also offers the interdepartmental major in international studies, which is headed by a faculty member in the Department of Political Science. This major offers an extensive treatment of international affairs from the perspective of a variety of disciplines. The international and world affairs emphasis, on the other hand, is offered exclusively by the department. Required: POLS 102, 230 or 240, 250, 260, 270 271, or 300; ECON 201 and 202; six hours (two courses) from the following courses dealing with international relations POLS 361, 362, 363, 364, 366, 367, 368; three hours (one course) which focuses on an industrialized country POLS 350, 351, 352, 353; three hours (one course) which deals with a developing country POLS 354, 355, 356, 358; six hours from the following history courses HIST 209, 242, 425, 426, 430, 463, 464; and 12 upper-division hours in a secondary field.

Minor in Political Science

Any student admitted to a major program other than political science may complete a formal academic minor in political science. In order to earn a formal minor, students must complete one of the following options.

General Political Science Required courses: six hours from POLS 102, 210, 220, 230 or 240, 250, 260. Any three additional courses from POLS 310-379. POLS 493 and 494 may be counted toward the minor with departmental approval.

American Politics and Policy Required courses: six hours from POLS 102, 210, 220, 230 or 240. Any three additional courses from 310-349. POLS 493 and 494 may be counted toward the minor with departmental approval.

International and Comparative Politics Required courses: POLS 250, 260. Any three additional courses from 350-369. POLS 493 and 494 may be counted toward the minor with departmental approval.

Law and Legal Studies Required courses: POLS 102, 210. Any three additional courses from 312, 313, 314, 331, 335, 363. POLS 493 and 494 may be counted toward the minor with departmental approval.

Political Theory Required courses: POLS 270, 271. Any three additional courses from 370-379. POLS 493 and 494 may be counted toward the minor with departmental approval.

Students must achieve at least a 2.0 in the 15 hours taken in political science. Courses graded P/F may not be applied toward the minor.

Honors Program

The Department of Political Science, in cooperation with the University Honors Program, offers courses that are open exclusively to honors students. These courses are listed in the University's *Schedule of Courses* each semester. Students who meet the standards of the University Honors Program may enroll in these courses.

Psychology

Michael Perone, Chair
Tracy L. Morris, Associate Chair

Degrees Offered

Bachelor of Arts, Bachelor of Science

Admission Requirements

Requirements for admission to the degree program in psychology include completion of PSYC 101 and STAT 211 with a minimum grade of C in each, completion of PSYC 201 with a pass, completion of 58 total credits with a minimum cumulative GPA of 2.0, and a minimum cumulative GPA of 2.0 in all attempted psychology courses.

Degree Requirements

Required Courses PSYC 101, 201, 202, 301, 302; STAT 211; either PSYC 241 or 251; one course from PSYC 423, 424, 425, 426; four additional courses, with no more than one at the 200 level, from PSYC 231, 232, 241, 251, 281, 293, 331, 342, 343, 345, 351, 362, 363, 364, 379, 382, 423, 424, 425, 426, 474, 493. Completion of the psychology capstone course (PSYC 401) and a capstone experience is required within the 12 months prior to graduation.

An overall 2.0 average in all psychology courses attempted is required for graduation. In addition, a minimum grade of C is required in the following courses: PSYC 101, 202, 241 or 251, 301, and 302, and STAT 211.

Students seeking the B.S. degree in psychology must also complete the college B.S. degree requirements and one additional course from PSYC 423, 424, 425, or 426.

Recommended Courses For students primarily interested in graduate work in psychology, the following courses are recommended: PSYC 331, 491, 495; additional courses from 423, 424, 425, 426, and 498.

For students primarily interested in a career in mental health or applied psychology requiring a B.A., the following courses are recommended: PSYC 241, 251, 362, 474, 491, and appropriate courses from among 231, 281, 363, 364, 379, and 382. For students majoring in psychology as a liberal arts field, including students who plan to attend graduate or professional school in a field other than psychology and students planning to work in a field not directly related to psychology but who wish a broad exposure to the field of psychology, the following courses are recommended: PSYC 241, 251, 331, and at least one course from among PSYC 281, 363, 364, 379, 382, and 474.

All psychology majors are encouraged to take upper-division courses that provide them an opportunity to apply basic principles of psychology. For this purpose, PSYC 490, 491, and 495 are recommended. Students must have instructor consent before enrolling in these courses.

Common electives for psychology majors include biology, child development and family relations, computer science, mathematics, philosophy, political science, social work, sociology and anthropology, and statistics courses.

For additional information: www.as.wvu.edu/psyc.

Applied Psychology Emphasis

Psychology majors interested in a career working in applied mental health or organizational settings following completion of their bachelor's degree may select the elective courses listed below. Students who complete these courses with a minimum grade of B in each may request a departmental certificate of completion and cover letter detailing the applicability of these courses to work in applied settings, which the student may then provide to potential employers. Students wishing to complete this emphasis should plan their curriculum carefully, and need to be aware that they will not be given special priority for gaining admission to the listed courses. The four elective psychology courses must include: PSYC 362 and 474; and two courses from PSYC 231, 363, 379, and 382. Students must also take at least 12 credits of PSYC 491.

Honors Program

The Department of Psychology Honors Program is designed to provide special enrichment, attention, and recognition for exceptional psychology majors. Admission to the program requires completion of nine hours of psychology, a psychology GPA of 3.5, and an overall GPA of 3.4. Graduation with departmental honors in psychology requires the same GPAs and completion of an honors thesis (three to six hours of PSYC 498). Information about the program is available in the department Student Records Office or from the Director of Undergraduate Training.

Regents Bachelor of Arts

Ann Paterson, Director

Especially designed for the adult, the regents bachelor of arts degree offers the possibility of earning college-equivalent credit based on the assessment of life and/or work experiences. A fee is charged for assessing such credit.

Degree Requirements

Total credits are 128, including 40 upper-division credits, and 36 credits in general education (at least six hours each in communication skills, humanities, social sciences, and natural or physical sciences, and three hours in mathematical science). This program has no major. Students may earn areas of emphasis.

Admission

Admission is open only to students who graduated from high school four or more years ago. For those passing a high school equivalency test, admission must be four years after their class graduated from high school. Students who possess a baccalaureate degree or are in another bachelor's program are ineligible.

Fees Tuition and fees are the same as for those in other undergraduate programs, except those seeking college equivalent credit pay an additional $300 fee.

Additional information is available from the Director, Regents B.A. Program, 210J Armstrong Hall, P.O. Box 6289, West Virginia University, Morgantown, WV 26506-6289. Phone: (304) 293-5441. E-mail: rba@wvu.edu. On-line at http://rba.as.wvu.edu.

Religious Studies

Richard Montgomery, Director

Degree Offered

Bachelor of Arts

Major: Interdepartmental Studies

Nature of Program

The program for religious studies offers instruction in the field of human experience concerning God, the transcendent, or ultimate concern. Such studies include intellectual examinations and discussions about this experience and about the resultant practices of ethics and ritual as well as the history of various religious traditions. The curriculum studies the world's great scriptures, the history of religions, contemporary religious thought, and the interrelation of theology and culture. Attention is given to the relevance of the subject matter to the lives of the students. Religious studies courses at the 100 level and 200 level may be taken for University LSP credit. They enrich the global, liberal arts education of the student. Also, an interdepartmental major in religious studies may be undertaken.

Admission Requirements

Admission to the interdepartmental degree program in religious studies requires a cumulative grade point average (GPA) of at least 2.0.

Degree Requirements

If admitted to the interdepartmental degree program in religious studies, the student will be required to satisfactorily complete 42 hours of coursework. Of these 42 hours, 24 are in religious studies, six in Biblical studies, six in the history of religions, six in contemporary religious thought, three in mythology and religion, and RELG 494. (Students who wish to use RELG 494 to fulfill this requirement must complete 12 hours of religious studies courses before registering for RELG 494). The other 18 hours fulfill requirements outside the program in religious studies. The following three-hour courses are required: SOCA 336, HIST 201 and 203, and PHIL 308. Six hours of American and/or English literature are also required. Students must maintain at least a 2.0 GPA in the required coursework in order to retain status as an interdepartmental major in religious studies.

Purposes and Options of the Degree

The interdepartmental degree in religious studies offers a basic general liberal arts education for students entering such professions as law, medicine, and business, if electives are carefully chosen. This major is useful to anyone seeking a professional career in religion, such as the ministry, academic study of theology, Biblical studies, religious journalism, or teaching.

Slavic Studies

Marilyn Bendena, Coordinator

Degree Offered

Bachelor of Arts
Major: Slavic Studies

Nature of Program

The slavic studies interdepartmental major provides a well-rounded understanding of the former Soviet Union and Eastern Europe. The guidelines have sufficient depth to provide for further study on the graduate level in one of the Slavic areas and sufficient breadth to provide a meaningful liberal arts major. Included in the Slavic studies major are courses in the Departments of Foreign Languages, History, and Political Science.

The demand of government and private industry for specialists in Russian and East European area studies has been expanding in recent years. This program prepares students for this job market.

Although the major is interdepartmental, faculty members work closely together and with individual students to provide academic counseling and job referral. The coordinator of the program functions as principal advisor to majors. The program also offers extracurricular activities which help to develop an appreciation for the Slavic world.

Admission Requirements

The student must fulfill all University and Eberly College of Arts and Sciences degree requirements. The student must have the equivalent of two years of Russian. A GPA of 2.0 is required for admission and graduation.

Degree Requirements

The major requires a minimum of 30 hours, 15 of which must include: HIST 217 and 218; RUSS 301 and 302, *or* 303 and 304; and POLS 351 or 366.

The remaining hours required may be chosen from a flexible list of courses approved by the Slavic Studies Committee. Such courses could include HIST 417, 418, 419, 420; FLIT 273, 274; POLS 351, 366; and RUSS 301, 302, 303, 304, 341, 342, 451, 493, 496.

Social Studies

Degree Offered

Bachelor of Arts

Major: Interdepartmental Studies

Nature of Program

The bachelor of arts in interdepartmental studies with an emphasis in social studies is designed specifically for students who intend to be certified to teach social studies in grades 5-12 and to complete a master's degree in education in the College of Human Resources and Education following fulfillment of degree requirements for the bachelor of arts in the Eberly College of Arts and Sciences. The bachelor of arts and master of arts in education degrees will be granted simultaneously upon completion of both degree programs.

Admission Requirements

Admission to the degree program may be requested upon completion of EDUC 100, EDUC 200 and 59 hours with cumulative grade point average of at least 2.75. Applicants also must pass the PPST (or qualify for a waiver) and submit a prescribed portfolio.

Degree Requirements

The social studies major consists of courses drawn from several disciplinary areas so as to prepare teachers for the broad array of required social studies courses they will teach. In addition to completing University and college requirements, the degree program requires:

Economics (nine hours)–ECON 201, 202, and either 451 or 454; Geography (15 hours)–GEOG 102, 107, 108, 209, and 240; and History (24 hours).

Fifteen hours represent a core of U.S. survey (six hours) and West Virginia history (three hours). To earn the remaining nine hours, the student chooses three courses from *one* of the following groups:

United States

255 *American Colonial Society*
256 *The American Revolution*
257 *Antebellum America*
259 *United States, 1865-1918*
261 *Recent America*
453 *Civil War and Reconstruction*

Global Development

205 *Early Modern Europe*
206 *Social History*
242 *Latin America: Reform and Revolution*
264 *American Indian History*
281 *The Agrarian Transformation (20th Century Russia)*
293 *European Social History*
405 *The Renaissance*
411 *The Industrial Revolution*
427/428 *East Africa*
433/434 *West Africa*
445 *American Women*
446 *European Women to 1700*
473 *Appalachian Regional History*
474 *City in American History*

- Political Science (12 hours)–POLS 101, 102, 210, 260.
- Psychology (three hours)–PSYC 241.
- Sociology and Anthropology (six hours)–SOCO 101 or 107; ANTH 105.
- Education (23 hours)–EDUC 100, 200, 301, 302, 311, 312, 400, 401, 410, 411.
- Geology (four hours)–GEOL 101, 102 (to be used in partial fulfillment of the University's Cluster C requirements).

Academic Advising

All social studies pre-majors and majors are advised in the College of Human Resources and Education.

School of Applied Social Sciences
Division of Social Work

Virginia Majewski, Chair and M.S.W. Program Director
Linda Ferrise, Program Director
Linda Hagerty, Field Instruction Coordinator
Brenda Morgan-Patrick, Academic and Admissions Counselor

Degree Offered

Bachelor of Social Work

Nature of Program

The Division of Social Work provides a comprehensive program of professional education in social work, including degree programs at the baccalaureate and master's levels, and a range of part-time and continuing education opportunities.

Our programs are fully accredited by the Council on Social Work Education, which makes our graduates eligible to seek licensure as social workers in West Virginia and other states, depending on individual state laws. The degree programs offered by the Division of Social Work allow students the opportunity to prepare for entry-level professional practice at the baccalaureate level and to specialize at the advanced (graduate) level of study. The baccalaureate program prepares social workers for generalist practice and has been a recognized national leader in the development of baccalaureate-level curriculum to support this educational goal.

Social work, one of the oldest human-service professions, is based upon the social and behavioral sciences used to understand and to help individuals, groups, families, and communities. Social work is a profession concerned with helping people accomplish life goals and realize their full potential. Four major purposes of social work are:

- To enhance the problem-solving, coping, and developmental capacities of people.
- To promote the effective and humane operation of the systems that provide people with resources and services.
- To link people with systems that provide them with resources, services, and opportunities.
- To develop and improve social policy.

In carrying out these purposes, social workers seek to solve problems associated with financial need, social and cultural deprivation, racial injustice, gender inequalities, physical and mental health, disadvantaged children, troubled youth, disturbed family relationships, and aging. Therefore, social workers are needed in a variety of service agencies, both private and public: schools, hospitals, correctional institutions, residential treatment settings, adoption agencies, industry, community service organizations, prisons, the courts, veteran's bureaus, nursing homes, children's services, and public welfare agencies. Because the social work arena is so broad, you will find it easy to discover a career path in social work that meets your interests and career goals.

Job opportunities for B.S.W. graduates are expected to continue increasing in the coming years. Given the positive national reputation of our B.S.W. program, our graduates often find themselves actively sought by employers.

Undergraduate Program Objectives

The objectives of the B.S.W. program are derived from the philosophy and goals of the Division of Social Work and the mission of the University, the objectives of the social work profession, and the needs of people in our society. A primary program goal is to prepare students as generalists for the beginning level of professional social work practice.

As part of the overall educational experience, you will obtain a well-rounded, liberal arts education. This education will assist in gaining personal knowledge and growth, in developing skills necessary to think and to work from an objective frame of reference, and in obtaining an awareness of human needs and ways to meet those needs in today's technologically advanced society.

By completing the liberal arts coursework, you will be better prepared to take on the responsibilities necessary to be effective both as a person and a helping professional. More specifically, the purpose of the baccalaureate social work program is described in six interrelated goals:

- To prepare the undergraduate student for entry-level professional practice, with special attention to rural and small town settings, through a curriculum of liberal arts and professional social work foundations.
- To prepare students for effective, responsive, and creative social work practice that will further develop the social work profession, humanize social welfare programs, and promote social and economic justice in society.
- To prepare students to practice within the value base and ethical standards of the social work profession.
- To prepare students for practice with diverse, oppressed, and at-risk populations.
- To enrich the liberal arts curriculum of WVU by providing opportunities for the undergraduate student body to increase their sensitivity, knowledge, and understanding of human needs, social problems, social welfare issues, and approaches toward resolution of problems.
- To provide a sound foundation for the student who may be appropriately interested in future graduate-level education within our Division of Social Work, in other graduate social work programs, or in other allied graduate programs of study.

Based on those six global goals listed above, the program has established objectives that inform the curriculum and guide students' learning throughout the program. More specifically, as a result of the B.S.W. educational experience, students will:

- Acquire the art and skill of thoughtful and well-reasoned inquiry as applied to professional social work practice.
- Internalize the profession's value base and gain skill in its application to resolving ethical dilemmas.
- Acquire a worldview that embraces the visions and voices of diverse populations as sources of cultural enrichment.
- Recognize the need for and commit to participation in activities that foster ongoing, post-graduation professional growth and development.
- Be able to assume entry-level generalist roles that effectively realize the purposes and functions of professional practice.
- Gain recognition of how one's own personal values can impact service delivery and reconcile value conflicts that will prevent effective service provision.
- Be able to assess and improve practice skills and practice effectiveness.
- Achieve an understanding of the role of dominant societal institutions in perpetuating the oppression of and discrimination against people who categorically belong to certain groups within society.
- Gain knowledge and skill in interventions that promote service and resource systems that are just, effective, and responsive to minority and other oppressed populations.
- Acquire a knowledge of the historical, philosophical, and ideological foundations that have influenced and currently shape social welfare policies and programs.
- Gain knowledge of and skills in generalist methods and approaches interventions with individuals, families, small groups, organizations, and communities.
- Acquire knowledge of the bio-psycho-social-spiritual variables that influence human development and behavior throughout the life span.
- Acquire an ecosystems perspective for making practice assessments.
- Gain skill in applying policy analysis frameworks to organizational and social welfare policies, as well as policy making structures, in order to determine policy impacts on clients, workers, and agencies.

- Acquire tools for evaluating research studies and develop skill in utilizing research findings to enhance practice effectiveness.
- Acquire the knowledge and skills necessary to evaluate practice outcomes and program effectiveness.
- Gain knowledge and skill to interact effectively with clients, colleagues, and members of other practice contexts who have differing social, cultural, racial, religious, spiritual, and class backgrounds.
- Gain skill in the use of collegial and supervisory networks to obtain feedback that will assist in developing practice competence and promoting professional development.
- Acquire knowledge and skill in the use of formal and informal structures to effect needed organizational change.
- Acquire a working knowledge of service delivery to rural and small town populations.

The 2 + 2 Program

WVU and several colleges within the state have entered into a joint commitment to increase the college-going rate of West Virginia residents, as well as the number of social workers within the state, through a special 2+2 arrangement that will lead to a bachelor of social work degree from WVU. For students from these colleges to enjoy the benefits of the 2+2 program they must be ready to enter the major when they matriculate to WVU. Although historically students from these other colleges have always had the opportunity to gain entrance to the B.S.W. program at WVU, the benefits of a more formalized linkage with these colleges are numerous. For example, brochures on the 2+2 program, *The WVU–B.S.W. Connection,* are available on students' home campuses, and designated faculty on those campuses work closely with WVU's B.S.W. program director to ensure a strong linkage between those campuses and WVU, which ensures students will have a smoother transition to WVU. Furthermore, expectations for entry and completion of the degree are now more clear to students, so the B.S.W. degree can be completed in a more timely manner. Students in the 2+2 program must meet the admissions standards for WVU and the B.S.W. program and must follow the B.S.W. program's policies for transfer students.

Admissions

Students interested in pursuing a degree in social work are identified as pre-majors until they are admitted into the program through a formal admission process, at which time they become social work majors. Our pre-majors enjoy the benefits of advisement by an academic counselor in the Division of Social Work who provides information about careers in social work and assists in planning students' academic program and registering students for their coursework every semester. As an incoming freshman, you become a pre-major in social work by indicating your interests in pursuing a degree in social work when you submit you initial application to WVU's Office of Admissions and Records.

In order for social work pre-majors at WVU, its branch campuses, or in the 2+2 program to enter the social work major, they must meet the B.S.W. program's admission criteria, complete a formal application for admission, and have their application approved by the Division of Social Work B.S.W. Admission Committee. The admissions process is competitive and students are selectively admitted to the program for their final two years of education, which includes the upper-division courses in social work.

Social work requires the ability to establish positive, supportive, and nonjudgmental interpersonal relationships. The ultimate test of a student's interpersonal skills is in relationship to clients. However, observed positive relationships with faculty and students serve as indicators of potential for future professional development and suitability for practice in the field. Social work is a profession whose members are expected to adhere to the National Association of Social Workers Code of Ethics and to conduct themselves in a professional manner. Therefore, the criteria for admission to the major, as well as for continuation in the program, include academic standards of a scholastic and cognitive nature, as well as of an affective and professional nature. To be eligible for admission to the major, you must meet the following minimum criteria:

- Have a 2.5 GPA on a four-point scale. (Note: The GPA will be calculated to include any substantial amount of coursework transferred to WVU from other institutions.)
- Complete 100 hours of appropriate human service activity (paid or volunteer) by the time of application for admission and receive a supportive or generally positive reference from the supervisor(s), as documented on the B.S.W. program's form.
- Complete 58 credit hours by the conclusion of the semester during which application to the program is made.
- Earn a C or better in SOWK 147 and 151 by the time of application for admission. (Students applying to the program through the 2+2 arrangement or as transfers from another institution can replace the SOWK 147 course with another minority course approved by the B.S.W. program director. When they matriculate to WVU, they must take SOWK 147, along with their first semester of upper-division social work courses.)
- Successfully complete English 101 and 102; Clusters A, B, and C; and a mathematics course by the conclusion of the semester during which application to the program is made.
- Demonstrate college-level writing skills.
- Show motivation to pursue a career in the field of social work.
- Show potential for commitment to the National Association of Social Workers (NASW) *Code of Ethics*.
- Possess a basic level of communication and interpersonal skills, which provide a sufficient foundation for building professional interactional skills.
- Show potential for professional development, such as responsiveness to feedback and willingness to address areas that might interfere with effectiveness as a future helper.
- In general, be sensitive to and respect human diversity, with a basic capacity for nonjudgmental behavior toward individuals whose values, beliefs, and lifestyles may be different from the student's own.
- Be reliable in carrying responsibilities as demonstrated in classes and volunteer experience (punctual, dependable, observes assignment deadlines, meets attendance expectations, etc.)
- Show a basic level of self-awareness in assessing strengths and weaknesses as these might impact carrying out professional responsibilities.

Students who present an overall GPA of 3.0 or above and meet the other admission criteria are guaranteed admission to the program. A certain number of slots are set aside for students from each 2+2 program campus who meet the minimum 2.5 GPA. Other students who meet the minimum GPA and all other admission criteria are admitted on a space-available basis. Applications for admission are reviewed once a year. Beginning every January, applications are reviewed for entry to the major the following fall semester.

As part of the division and the B.S.W program's academic standards, students may be denied admission to the major or continuance in the program for conduct that violates the code of ethics of the National Association of Social Workers. Students shall be provided appropriate safeguards for appealing such decisions and shall be provided with an opportunity to demonstrate that the conduct in question has been modified to the point of being in compliance with the ethics code. Should the student not be able to make the necessary modifications in conduct, he or she shall be counseled out of the program in accordance with established University policy as set forth in WVU's student handbook, *The Mountie*. Procedures for terminating a student from the program follow the school's academic performance review policy.

Transfer Students

If you are a transfer student, including 2+2 students, and you wish to enter the social work pre-major or major, you must contact WVU's Office of Admissions and Records, and the B.S.W. program director, no later than the semester before you intend to matriculate to WVU. For entry to the B.S.W. program, you must meet all requirements that apply to pre-major status. If your plan is to matriculate to WVU in the fall semester as a social work major, you should contact WVU's Office of Admissions and Records the prior December and complete your application to the B.S.W. program for admission to the major in January.

Upper-division social work courses taken at other institutions do not automatically transfer to WVU and meet our program's requirements. To gain approval for these courses you must have earned a B or better in the course(s) and you must submit course syllabi and other appropriate course materials to the B.S.W. program director. Courses that are not approved count as electives. The lower-division social work courses taught on 2+2 campuses have received approval via the formal agreement with the program.

Requirements for the Degree

The undergraduate social work program consists of a foundation in the liberal arts, a minimum of 38 upper-division hours and six lower-division hours in social work, a minimum of nine upper-division hours in required social and behavioral sciences courses, and an additional requirement of nine upper-division social science hours with at least three hours in each of the fields of sociology, psychology, and political science. All social work students are required to take three additional hours of coursework dealing with racial or other minority groups selected from a list of courses designated by the undergraduate social work program. A total of 128 hours is required for the degree. Of these, 58 credit hours must be in upper-division coursework. You are encouraged to consult with your advisor regarding the selection of electives appropriate for your career interest.

To establish a social work major and to qualify for graduation, you must have been enrolled for at least two semesters and have accumulated a minimum of 30 hours as an upper-division student in the social work program, or under its guidelines. Also, you must fulfill the following: complete all required social work courses—in their proper sequence—with grades of C or higher, maintain an overall grade point average of 2.0 or above, and maintain a grade point average of 2.0 or better in all upper-division social science courses specifically required of the social work major.

Students who are unable to meet the performance standards for social work courses are permitted to repeat a course one time. If the student is unsuccessful in the second attempt, he or she must leave the program. If a student is unsuccessful in either SOWK 290 or 291, both courses must be repeated and successfully completed to meet graduation requirements. The specific curriculum requirements for graduation are:

University Liberal Studies Program	**Hrs.**
Cluster A	12
Cluster B	12
Cluster C	11-12
plus	
ENGL 101 and 102	6
Mathematics	3
SOWK 147 (Minority content)	3
Subtotal	**47-48**

In the LSP, you must also take a writing skills course in social work, currently SOWK 494. As a social work student, you are required to take the following Cluster B courses: PSYC 101, POLS 101 or 102, and SOCA 101 and 107. In Cluster C, you must take a lab science class for four credit hours.

	Hrs.
Additional minority requirement	**3**
Social and Behavioral Science Required Courses	
PSYC 241 *Introduction to Human Development*	3
SOCA 221 *The Family*	3
POLS 220 *State and Local Government*	3
Subtotal	**9**
Additional social and behavioral science requirements (nine hours total with three hours each in psychology, sociology, and political science.)	9

Required Social Work Courses

Lower Division

SOWK 151 *Introduction to Social Work* 3

Upper Division

SOWK 300 *Social Welfare Policy and Services 1* 3
SOWK 310 *Social Welfare Policy and Services 2* 3
SOWK 319 *Skills Lab 1* 1
SOWK 320 *Social Work Methods 1* 3
SOWK 322 *Social Work Methods 2* 3
SOWK 323 *Skills Lab 2* 1
SOWK 330 *Human Biology for Social Work* 3
SOWK 350 *Human Behavior for Social Work* 3
SOWK 360 *Social Work Research and Stats* 3
SOWK 494 *Social Work Practice Seminar* 3
SOWK 491 *Field Practicum* 12
Subtotal **50**
Electives 18-19
Grand Total **128**

Typical Study Load

Students with grade point averages under 3.0 are only rarely permitted to carry more than 18 credit hours. If your grade point average is 3.0 or above and you want to carry 19 to 21 hours, you must petition the chair of the Division of Social Work through your advisor. Students are not permitted to carry more than 21 credit hours in a semester.

Field Instruction Requirements

Field instruction, which occurs during your senior year, is a key component of your total educational experience in the undergraduate social work program. During the field practicum (SOWK 491) you will have the opportunity to demonstrate through actual social work service-providing activities your ability to utilize and apply the knowledge, values, and skills you have acquired while at WVU or as a result of other life experiences.

To enter the field practicum, you must meet the following criteria:

- Senior rank (at least 89 hours completed).
- A 2.0 overall grade point average.
- Completion of all social work courses with grades of C or better.

Field placement activities are usually carried out for one semester as a modified block system, but part-time students may be interested in a two-semester placement called a concurrent system. The block system requires students to spend four full work days in placement over the course of one complete semester (63 days). The concurrent system requires students to spend two full work days in placement over the course of two semesters. A minimum of 440 clock hours of field placement work must be completed during the field practicum. While in field placement, students participate in SOWK 494 *Social Work Practice Seminar*, which provides educational support for the practicum.

After consultation with your advisor, and with the approval of the B.S.W. program director and field instruction coordinator, you will be assigned to an approved field placement setting. Field placement assignments are in social welfare organizations and agencies in Monongalia or surrounding counties. These organizations have met the criteria for participation in our field instruction program.

To successfully complete requirements for graduation, students must demonstrate, through educationally focused field experience activities, those competencies (i.e., combination of social work knowledge, values, and skills) which have been identified as suitable and necessary for entry into professional social work practice.

Non-Majors in Social Work Courses

If you are a candidate for a Board of Regents Bachelor of Arts Degree (B.O.R.B.A.) with an interest in a career in social work, you will be permitted to take any of the undergraduate social work courses except the practicum on a space available basis or with instructor's consent. B.O.R.B.A. candidates must meet the same requirements for sequencing and performance standards in social work courses as social work majors. Other non-majors are also permitted to take selected social work courses on a space-available basis, which do not include our methods, skills lab, and practice courses.

School of Applied Social Sciences
Division of Sociology and Anthropology

Lawrence T. Nichols, Interim Chair

Degree Offered

Bachelor of Arts

Nature of Program

Sociology and anthropology courses constitute an important part of a liberal education. They foster an awareness of the structure of human societies and of the social processes which operate in all groups, organizations, and institutions. The student is exposed to the methods of inquiry and to the special knowledge and insights of sociology and anthropology. Courses in the division also are intended to facilitate the application of sociological and anthropological principles to the wide range of contemporary social problems. Sociology and anthropology constitute an important part of the undergraduate education for those pursuing careers in law, health professions, or business, and for engineers and scientists concerned with environmental and ecological problems. Majors in sociology and anthropology often find employment doing applied research with government agencies, assisting in community development and planning, or using knowledge of social organization and social process in a variety of settings within the United States or abroad. Majors are well-equipped for graduate training in the social sciences in pursuit of academic or applied research careers.

Admission Requirements

Students may apply for admission as pre-majors during their freshman or sophomore year. They may apply for admission as majors upon completion of 58 credit hours with a cumulative grade point average (GPA) of at least 2.0.

Degree Requirements

General Requirements All students in the division are required to take the following courses in addition to the required courses in their chosen area of emphasis:

SOCA 101 *Introduction to Sociology*
SOCA 105 *Introduction to Anthropology*
SOCA 311 *Social Research Methods*
SOCA 401 *Sociological Theory* (or SOCA 455 *Anthropological Theory*, when available)
SOCA 488 *Capstone Experience*
STAT 111 *Statistics*

Emphasis Requirements Every major must complete the requirements of one of the divisional areas of emphasis. The areas of emphasis are in anthropology, crime and social control, and social inequality and social development.

- Students majoring in the Division of Sociology and Anthropology must earn a minimum of 33 credit hours in division courses. Twenty-seven hours are required at the 200 level or higher, of which twelve (including SOCA 311 and 401 (455) must be 300 level or higher. Specific courses are identified for each area of emphasis. It is assumed that all elective courses are three-credit courses.

- Students are encouraged to do independent study, fieldwork, or an internship in the senior year, combining experiential work with previously acquired skills in a project appropriate to their emphasis. Up to three credit hours of independent study (SOCA 495) or field experience (SOCA 491) may be counted toward fulfilling departmental elective requirements.
- An overall 2.0 GPA is required for graduation; a 2.0 GPA is also required in departmental courses for graduation.

Areas of Emphasis

Each sociology and anthropology major must enroll in a sociology or anthropology emphasis, depending on his or her academic or career interest. The areas of emphasis and the individual requirements of each are as follows:

Anthropology introduces students to the classic four-field perspective in this discipline: archaeology, physical, linguistic, and cultural anthropology. The program attracts students with a strong interest in physical anthropology and archaeology who have a deep interest in other cultures and places in the contemporary world. Courses deal with third-world health problems provoked by first-world systems, traditional cultural area studies, and the nature of our cultural and biological past. Required: in addition to general degree requirements, students must take SOCA 252 and 258/250 (lab) or SOCA 359, and must take 12 hours selected from SOCA 251, 255, 256, 257, 258, 259, 353, 358, 455, 456, or 493 (three credit hours of field work may be substituted for three credit hours); three elective hours in sociology (200 or above); and three elective hours in either sociology or anthropology (200 or above).

Crime and Social Control Emphasis gives students a thorough understanding of the social problems that exist in our society today, as well as the social policies designed to remedy these issues. Specific social problems include poverty, discrimination, crime and violence, unemployment, and terrorism. Students complete a set of core courses designed to provide critical thinking and writing skills, and emphasize interests in crime and social control. Students concentrating in this area of emphasis will be prepared for graduate programs and/or careers in sociology, public administration, government, law and criminal justice, and applied social research. The area may be attractive to minors in sociology. Required: in addition to general degree requirements, students must take fifteen hours from SOCA 107, 232, 233, 235, 302, 304, 322, 330, 331, 334, 339, 345, 407, or 461, with at least six hours at the 300 to 400 level; three elective hours in anthropology (200 or above); and three elective hours in sociology or anthropology (200 or above), outside of the area of emphasis.

Social Inequality and Social Development combines two key ideas in structured inequality into one focus. *Social Inequality* provides an understanding of differentiation and ranking among individuals and groups in the U.S., historically and cross-culturally. Examining why social inequality exists and persists, students learn about differential devaluation with regard to gender, race, ethnicity, religion, class, age, sexual orientation, and disability. *Social Development* inquires into the structure of work, economic and social change, and community and regional development. This area of emphasis also allows students to learn how social systems and their development affect nations, regions, communities, households, and individuals—how change and development impacts people, places, and organizations in the "real world." Students are encouraged to use their electives to focus on particular problems of inequalities and change. For example, combining courses in sociology, geography, and history, students can focus on forces that affect West Virginia and the Appalachian region. Wrapped around the core requirements, this area of emphasis instills solid reasoning, analytical, and critical thinking skills in students, and encourages the development of computer literacy and applied research skills. Students following this area of emphasis expect to enter professional and graduate programs, move directly into jobs in the public and private sectors, or focus courses into accommodated interests such as women's studies, Africana studies, Native American studies, and gerontology. Required: in addition to general degree requirements, students must take fifteen hours selected from SOCA 221, 222, 223, 235, 238, 240, 248, 304, 322, 323, 325, 332, 333, 336, 337, 360, 362, 405, 440, 463, or 490, with at least six hours at the 300-400 level; three elective hours in anthropology (200 or above); and three elective hours in sociology or anthropology (200 or above) outside of the area of emphasis.

Minor in Sociology and Anthropology

Students desiring a minor in the Division of Sociology and Anthropology may do so by fulfilling the requirements of one of the minors listed below. (If more than one minor is desired, any given course will count toward fulfilling the requirements of only one minor.)

For all minors, a GPA of 2.0 is required in 15 hours of coursework in one of the options specified below.

Anthropology Students must take SOCA 105 and twelve additional hours. Students must take SOCA 105 and 12 additional hours nine of which must be 300 level or higher in regular anthropology courses. (Anthropology courses are numbered in the 50s, e. g., SOCA 255 or 256.)

Sociology Students must take 15 credit hours, including either SOCA 101 or 107 (3 hours), and 12 additional hours, nine of which must be 300 level or higher, in sociology (not anthropology) courses. Sociology courses are SOCA courses *not* numbered in the 50s (i.e., *not* SOCA 250-259, 350-359, 450-459). A GPA of at least 2.0 in courses counted toward the minor is required.

Statistics

E. James Harner, Chair

The Department of Statistics no longer offers a bachelor of arts in statistics. Instead students interested in statistics should consider the interdepartmental bachelor of sciences in industrial mathematics and statistics.

A minor in statistics is available to university students. An applied statistics and a mathematical statistics track are available.

Minor in Statistics

Students may choose from two minor tracks. A grade of C or higher in each course counted toward the minor is required. MATH 156 is a prerequisite for STAT 215. MATH 251 is a prerequisite for STAT 461.

Mathematical Statistics Track: STAT 215 and 461, and nine hours from STAT 217, 312, 313, 316, 331, 421, 445, 462.

Applied Statistics Track: STAT 211 or 215, and 12 hours from STAT 217, 312, 313, 316, 331, 421, 445, 461, 462.

Completion of either track will be posted as a minor in statistics.

Women's Studies

Barbara J. Howe, Director, Associate Professor of History

The Center for Women's Studies has a University-wide mission to coordinate interdisciplinary teaching and research on women and gender. The center offers a minor in women's studies, a certificate program, and an area of emphasis for Regents B.A. students. The center also sponsors lectures, films, colloquia, an annual residency, faculty and student development programs, and a scholarships and awards program. The center's visiting committee is developing a mentoring program for women's studies students.

Nature of Program

Women's studies scholarship on women and gender has revolutionized most academic disciplines over the last 25 years. Women have been studied for a long time, but only recently have women significantly influenced the questions that have been asked, the methods that have been used, or the uses to which that knowledge has been put. Women's studies courses examine the contributions, perspectives, experiences, roles, and status of women within a multicultural and historical framework. Challenging the stereotypes of women and men, our students explore the relationships among gender, race, ethnicity, sexual identity, socioeconomic class, and age. Women's studies is an interdisciplinary field which embraces the arts, humanities, social sciences, life sciences, and physical sciences.

Career Opportunities

Business, public administration, health care, communications, law, teaching, social work, counseling, creative arts, government, and journalism are all fields in which a minor in women's studies may be a valuable professional credential. A women's studies background is helpful to both women and men entering professions that have traditionally been restricted to one sex. Women's studies is especially useful for employment in areas of work, such as rape crisis centers, feminist publishing houses, campus women's centers, affirmative action offices, sex equity projects, advocacy and lobbying programs, domestic violence shelters, and displaced-homemaker programs.

Academic Opportunities in Women's Studies

Women's studies courses in a variety of areas throughout the University are available to interested students. May of these courses fulfill Liberal Studies Program distribution requirements (clusters) as well as the requirement in foreign culture/minority studies/gender studies. In addition to the women's studies courses listed in this catalog, many women's studies courses are offered through other departments. Updated lists of women's studies courses are available from the Center for Women's Studies each semester. Undergraduate students may earn a minor in women's studies. Graduate students may earn a graduate certificate in women's studies. A master's degree with a concentration in women's studies is available through the Master of Arts in Liberal Studies (M.A.L.S.) program.

Minor in Women's Studies

Any student admitted to an undergraduate degree program at WVU may earn a minor in women's studies. Students are advised to design an individualized minor and may choose to focus on an area of concentration such as feminist thought or women's health and sexuality. A grade point average of 2.75 in 18 hours of coursework is required for the minor. Students must take WMST 170, 494, and 12 additional hours in women's studies courses or approved departmental primary courses with at least nine hours in upper-division courses. The 12 additional hours may include no more than six hours with any one prefix (WMST courses excepted), no more than one course in the student's major, and no more than three hours of independent study or field experience. Students are required to register with the Center for Women's Studies to enroll in the minor. Application forms and more information about the women's studies curriculum may be obtained from the Director, WVU Center for Women's Studies, 218 Eiesland Hall, P.O. Box 6450, Morgantown, WV 26506-6450. Telephone (304) 293-2339, ext. 1155. E-mail: Barbara.Howe@mail.wvu.edu. On-line at: www.as.wvu.edu/wmst/.

Perley Isaac Reed School of Journalism

Christine M. Martin, M.A., Dean
R. Ivan Pinnell, Ph.D., Associate Dean for Academic Affairs and Graduate Studies
Robyn Blakeman, M.L.A., Coordinator for Student Affairs and Curriculum and Coordinator for Integrated Marketing Communications On-line Graduate Programs
www.wvu.edu/~journals

Degree Offered

Bachelor of Science in Journalism

Specialized Programs (Majors): Advertising, Broadcast News, Journalism Education, News-Editorial, Public Relations

The Perley Isaac Reed School of Journalism, established in 1939 and one of the oldest of its kind in the United States, offers appropriate education in the broad area of mass communications. Many of the nearly 4,600 School of Journalism graduates use their training to cover events throughout the world for print and electronic news media, to manage major accounts in advertising agencies and media departments, and to serve in public relations positions with corporations and other institutions. They are newspaper editors and reporters, radio and television broadcasters, university professors, attorneys, and business men and women.

Accreditation

The Accrediting Council on Education in Journalism and Mass Communications (ACEJMC) fully accredits the School of Journalism and its five programs: advertising, broadcast news, graduate professional, news-editorial, and public relations. More than 100 colleges and universities have earned ACEJMC approval. The school is also a member of the Association of Schools of Journalism and Mass Communications.

Equal Employment Opportunity and Affirmative Action Plan

West Virginia University is an equal opportunity/affirmative action institution. The University does not discriminate on the basis of race, sex, age, handicap, veteran status, religion, sexual orientation, color, or national origin in the administration of any of its educational programs or activities or with respect to admission and employment. The University neither affiliates with nor grants recognition to any individual, group, or organization having policies that discriminate on the basis of race, sex, age, handicap, veteran status, religion, sexual orientation, color, or national origin, as defined by the applicable laws and regulations. Faculty, staff, students, and applicants are protected from retaliation for filing complaints or for assisting in an investigation under the University's Equal Opportunity/Affirmative Action Plan. Inquiries regarding the University's non-discrimination policy may be directed to the Office of Social Justice, West Virginia University.

The School of Journalism (SOJ) endorses WVU's affirmative action plan and has historically applied the plan's principles in all school initiatives and activities. Assurance of equal opportunity and affirmative action procedures are included in both the University and School of Journalism guidelines for faculty recruitment. The State's minority population was reported as 4.36 percent (3.2 percent African-American in the 1998 census estimate), yet the minority population of the School of Journalism in fall 1999 was 7 percent.

SOJ colleagues wish to maintain minority enrollment as high as or higher than the percentage of minorities in West Virginia. To recruit minority students, the faculty and staff visit state high schools and community colleges, periodically send representatives to metropolitan area high schools with large African-American populations, respond quickly to minorities seeking information about the school, initiate contacts with all who tell admissions counselors about being interested in journalism, and give special attention to minority internship/placement opportunities.

The school appreciates ethnic, racial, and cultural diversity among students, faculty, and staff; professors often incorporate historical and contemporary issues within their teaching and learning experiences. The dean, associate dean, and director of external relations attend University minority recruitment activities.

The school established the Journalism Qualifying Examination, along with C's or better in certain courses, as pre-entrance admission requirements in summer 1990; these achievement thresholds have helped to assess students' verbal skills as well as writing career aptitude. For a list of recommended pre-test chapter readings before the fall, spring and summer exam dates, you may consult "Information and Prerequisites" (available from SOJ faculty and UASC advisers). Colleagues have contributed to a 301 Martin Hall memorial fund book collection so students can prepare for the qualifying exam's five parts—vocabulary, reading comprehension, spelling, language mechanics, and language expression—and so the prospective majors can perform well in JRL 215, the school's Writing (W) course.

To prevent disenfranchising minorities and West Virginians, the school gives special consideration to both minorities and West Virginians in its admissions procedures.

Professional Relations

A close relationship is maintained with the mass media through the West Virginia Press Association, the West Virginia Press Women, the West Virginia Broadcasters Association, the West Virginia Associated Press Broadcasters Association, Public Relations Society of America (West Virginia and Pittsburgh chapters), American Advertising Association of America, American Advertising Federation, Business and Professional Advertising Association, the Pittsburgh Ad Club, National Press Photographers Association, Society of Professional Journalists, and the West Virginia Public Relations Associates, an adjunct to the press association. These groups have provided educational and financial support to the school.

In turn, the School of Journalism provides regional advertising seminars to aid newspaper publishers, broadcasters, and retail merchants. Newswriting workshops assist state and regional news staffs as well as weekly newspaper stringer/correspondents. Faculty have offered science writing symposia and seminars about Appalachia, women in the media, the future of transportation, plus coaching for students and news people; SOJ representatives also have worked with the Public Relations Associates of the Press Association in establishing seminars.

Each summer the dean co-sponsors the prestigious, intensive six-week Poynter Institute news reporting and writing fellowships for the top 16 journalism graduates nation- and worldwide. The school continues its efforts to educate and to inspire high school journalists and their teachers with the annual West Virginia High School Journalism Competition each spring and with a proposed summer workshop program.

In February 2000 the SOJ sponsored a historic reunion of celebrated Vietnam war correspondents Peter Arnett and George Esper. During April the school created another first: a nationally publicized C-SPAN televised panel of seven Vietnam women war correspondents; later that month their live presentation was broadcast on the 25th anniversary of the Fall of Saigon; in October a rebroadcast was part of C-SPAN's five-part series called "The State of Journalism."

In spring 2000 the dean and faculty revitalized the yearly celebration of Journalism Week, which featured former NBC and ABC correspondent Ed Rabel plus three-time Pulitzer Prize-winning Washington Post photographer Carol Guzy. In October the advertising major program brought outstanding alumnus Ray Gillette to discuss Budweiser's "WASSUP" campaign, created by his company, DDB-Needham; that campaign has become one of the most successful in advertising history.

Since 1998 the broadcast news program has enjoyed a mutually beneficial partnership with KDKA-TV in Pittsburgh; the arrangement creates an SOJ bureau allowing students to cover WVU and Morgantown-area news for a major market affiliate.

In November 2000 PRSSA hosted Charles Ryan Associates' president, Pat Gallagher, who told students how to sell themselves, their ideas, and their experiences.

In spring 2001 the SOJ designed and sponsored a panel of Pulitzer Prize-winning journalists who described their path to success.

Journalism Organizations

Several organizations affiliated with the School of Journalism provide honor and recognition as well as fellowship and education. They are:

Alpha Delta Sigma, a scholastic advertising honorary.

American Advertising Federation, a professional advertising fraternity.

Kappa Tau Alpha, a national scholastic honorary for students with exceptional academic records in journalism.

Public Relations Student Society of America, a national public relations professional organization.

Diversity in Media Association (DIMA), an organization affiliated with a national professional association whose purpose is to enhance media career opportunities for all types of minority students.

The Society of Professional Journalists, a professional society for News-Ed and Broadcast News majors.

Nature of Program

The study of journalism, once limited to vocational training of newspaper reporters, now includes many varieties of communication. Our program emphasizes professional ethics and responsibilities in the broad study of mass communication and society.

A journalism education involves more than learning to write and to edit news stories, to broadcast documentaries, or to develop creative advertisements and public relations campaigns; it involves the study of substantive current issues, mass media trends, as well as historical and cultural developments in worldwide civilization. Graduates should have a thorough understanding of the U.S. Constitution and the special roles of freedom of the press and freedom of speech in our political system. Such an education must be interdisciplinary, based upon the liberal arts, social sciences, natural sciences, and business.

The basic goal of the School of Journalism is to educate our graduates for media-related careers in West Virginia and neighboring states. Some of our alumni will seek and succeed in national and international careers.

Graduates of the school earn a B.S.J. and are expected to demonstrate the following:

- An understanding of the history, structure, and function of mass media.
- The basis for a life-long commitment to ethical behavior, responsible citizenship, and public service, especially in terms of the Constitutional role of the mass media and professionals who produce their content.
- Proficiency in written and oral communication.
- Ability to read and to listen critically (to analyze and to interpret).
- Proficiency in interviewing skills.
- The ability to apply those skills to specific media and media-related occupations.
- The ability to secure employment in a media or media–related field.
- The ability to advance to leadership positions in that field (management ability).
- Knowledge, understanding, and appreciation of diversity in languages, cultures, ideas, and peoples along with a desire to work so that all individuals are treated in a manner consistent with social justice.

When you enroll in the School of Journalism, you will find a faculty of 14 full-time and numerous part-time adjunct instructors with extensive mass communications experience. The faculty represents the diversity of the school itself with appropriate educational backgrounds and professional experience with newspapers, the wire services, radio and television, public relations firms, advertising agencies, major corporations, and governmental agencies.

Various specialization areas provide realistic outlets for students' interests. Campus reporters and editors are introduced to local print (*Daily Athenaeum*, *The Dominion Post*) and electronic media (WVU Radio and Television Production Services, WNPB-TV, West Virginia Public Radio, Metronews Radio Network, and WWVU-FM). Photojournalists gain practical experience with the *Daily Athenaeum*, *The Dominion Post* and AP wire service. Students of print journalism learn electronic editing and pagination. Public relations and advertising majors execute projects of importance to local and state organizations. Internships and fellowships are available on campus, throughout West Virginia, and in many other locations.

The School of Journalism is in renovated Martin Hall, WVU's oldest building (constructed in 1870). More than $1.8 million was spent on renovating, furnishing, and equipping the building in 1976-77. Five laboratories are equipped with Macintosh systems to teach beginning reporting through desktop publishing. Other labs house modern radio and television equipment, light tables, digital photography equipment, and space for independent study. In addition, the reading room stocks current newspapers, magazines, professional journals, and reference works.

Typing Proficiency

You will be expected to submit all assignments in neat, type-written or word-processed form. Because you will have professors who prefer that you know the touch system of typing before you enroll in Journalism 215, you must demonstrate or will need to develop your wordprocessing proficiency in this first writing class required for each major program. Prior to being admitted to JRL 215, students should have some basic operating knowledge of Macintosh computers and will need to know how to save copy onto the hard drive, onto a double- or high-density disk, and onto a zip disk. Plan ahead so you will be able to type easily and to concentrate on ideas, structure, and final assignments before deadlines.

Admission to the Pre-Journalism (1030) Major and to the Direct Admission Journalism (4930) Major

The School of Journalism uses the same admission standards as the University for pre-journalism students. However, you could qualify for direct admission to the Perley Isaac Reed School of Journalism if you are a freshman or transfer student with at least a 2.5 cumulative nonweighted high school grade point average and at least a 22 enhanced ACT English score or at least a 520 recentered SAT verbal score.

Proficiency in English

The faculty emphasize competence in writing. If you plan to major in journalism, you must achieve at least C grades in English 101 and 102, MDS 103, and Journalism 101. In addition, each 1030 and 4930 must earn a Journalism Qualifying Examination competitive score and a 2.0 cumulative GPA to be eligible for Journalism 215. You may not enroll in most journalism courses until after you have completed these prerequisites.

Priorities for Admission to Journalism 215 and Major Program Specific Courses

Students who meet the basic criteria for JRL 215 admission will be ranked by an index score derived from a combination of every individual's cumulative GPA (minimum 2.0) and JQE score; each candidate may earn up to 100 points for a 4.0 and up to 100 points for a 100 JQE score. Only 1030 (pre-journalism) and 4930 (direct admission journalism) majors may enroll in JRL 215.

Priority for this 1030/4930 majors' writing (W) course will go to competitive students who possess all the class prerequisites and who indicate their time preference(s) on one to three specific JRL 215 possible classlists posted in 108 Martin Hall. (Candidates who sign up after an academic term break may not be as eligible.)

SOJ staff will e-mail/phone successful applicants with the highest-ranking index scores (based upon JQE scores and cum GPAs) ASAP after calculating the most qualified students, who will gain admission via Course Registration Approval Form signatures.

If all sections are full, students seeking JRL 215 may contact the specifically designated professor immediately or attempt enrollment in a subsequent term. West Virginia residents and minority students will be given special consideration regarding JRL 215 admission.

JRL 101, JRL 220, ADV 215, BN 215, and PR 215 are open to all University students —first-come, first-served. Anyone may enroll in a maximum of six of these hours beyond JRL 101 before being admitted to the SOJ. Those who attempt to enroll in other journalism-related courses but who lack the appropriate prerequisites will be removed from such classes.

Scholarships

Approximately 40 School of Journalism majors are awarded financial scholarships ranging from $400 to $3,000 each year. Students with a 3.0 or better cumulative GPA may apply to the School's Scholarship Committee during announced selection periods. Awards are generally based on academic performance, potential for success in media careers, financial need, and sometimes residency.

Admission

To be admitted as a School of Journalism major, you must meet these requirements:

- achievement of at least C grades in English 101 and 102 (See "Proficiency in English" above);
- demonstration of necessary skills by scoring competitively on the School's Journalism Qualifying Examination or its equivalent to vie for competitive acceptance into the school;
- completion of JRL 101 and JRL 215 with at least C grades;
- completion of MDS 103 with at least a C grade;
- completion of at least a 2.0 cumulative grade-point average;
- successful completion of 36 or more hours (excluding F's) if you are a 1030 major; plus
- completion of a contract, an application for admission to the School of Journalism, and an Academic Status Change form (typically during the JRL 215 term).

The SOJ Academic Standards Committee may accept each candidate for one of his/her firth through fourth major program preferences (Advertising—4944, Broadcast News—4946, News-Editorial—4948, or Public Relations—4950).

Reapplication to the school and to a specific program's curriculum may be necessary during a subsequent academic term if a candidate cannot gain admission to the major of his/her choice on the first attempt.

After the associate dean compares your credentials to others' seeking the same program, you will receive an acceptance or rejection letter and learn your newly assigned advisor's name. You must consult with that person to pre-register and to obtain a new Personal Identification Number (PIN #) each academic term until you graduate. You must have the current prerequisites for all journalism-related courses completed with C's or better to advance in any discipline. If not, you will be administratively deleted from a course(s) without notification.

Graduation Requirements

When you satisfy all general University Liberal Studies Program (LSP) requirements and meet the School of Journalism requirements, you are recommended for the bachelor of science in journalism degree. Your combined credits acquired as a pre-journalism or direct admission journalism major and as a regularly enrolled journalism major must total no fewer than 128. This number excludes non-translated courses (open credit or 000-numbered classes) from other colleges, any course (such as Music 100) repeated more than once unless it represents a different learning experience, and more than 12 hours of COMM. The 128 hours also excludes COMM 494, ESL 494, ENGL 491, POLS 491, PSYC 491, SOWK 321, and SOCA 491 unless the dean approves an exception after studying a written proposal signed by the student, the specific departmental advisor, and the proposed intern supervisor. Exceptions will not normally include internships that would be acceptable for JRL 441 credit. While WVU frequently accepts all junior college credits, the School of Journalism follows the Accrediting Council on Education for Journalism and Mass Communications' recommendation to accept no more than 12 journalism credits from such institutions.

The School of Journalism will accept no more than 12 journalism/journalism-related courses from colleges and universities outside the University of West Virginia System.

In line with the national accreditation council's and the school's philosophy about the ratio of professional journalism courses to liberal arts courses, you will take approximately one-fourth of your hours in journalism. The minimum number of journalism hours is 30, and the maximum number ordinarily is 38.

You may pursue another degree concurrently, but you must plan the programs with the deans of the two colleges or schools involved. To earn a second baccalaureate degree, you must complete 158 credit hours. If you have one bachelor's degree, you also may seek a bachelor's degree in journalism; again, you must plan the program with the dean.

If you are within 12 hours of graduation in the last term, you may elect to take one or more courses for graduate credit. However, you must consult with your advisor and the dean.

Scholastic Requirements

To be eligible for graduation, you must earn a minimum 2.0 cumulative grade point average; concurrently, the average in your minor or second concentration field must be at least 2.0. Courses totaling at least 15 hours in the minor or second concentration field or 12 hours in each of two second concentration fields must earn the minimum 2.0 grade-point average. *Students also must earn at least a C grade in all journalism, advertising, broadcast news, news-editorial, and public relations prerequisite courses to advance in any discipline. If not, you will be administratively deleted from a course(s) without notification.*

To be sure about progressing appropriately, advisees must seek a revised curriculum sheet each term from their advisors and must submit a pre-graduation (penultimate-term) curriculum sheet summary to their respective advisors; these are requirements in preparation for graduation.

Note: Prerequisite/corequisite requirements for journalism-related courses may be waived by the consent of the instructor or major program chairman offering the course. Consent is granted when a student demonstrates equivalent experience or the knowledge provided in the prerequisite/corequisite courses.

Academic Minors and Second Concentration Fields

To graduate, you must complete either a minor(s) or second concentration field(s).

Consult your advisor about acceptable academic minors, which can appear on your transcript. However, because ACEJMC does not allow communication studies in the liberal arts spectrum, a WVU journalism major cannot select COMM as a minor.

The WVU administration has approved specific, carefully outlined minors in agricultural and consumer sciences, arts and sciences, international studies, women's studies, business administration, ROTC, and some creative arts fields. Students interested in any minor appearing on the official list should confer with their advisors to identify the exact courses and prequisites required.

In a minor or second concentration field of study, you must earn C's or better in stipulated classes (at least 15 hours in a subject outside journalism); three hours must be in a course numbered under 300; some minors, though, include no lower-division hours. Classes at the 300 level or higher, even if they can be taken more than once, will count only once unless they represent different learning experiences.

If you pursue two second concentration fields simultaneously, the requirements for each field must total at least 12 hours, of which no more than three hours can be numbered under 300.

Full-Time Load/Probation

No one may enroll for more than 19 hours in a single term or 13 hours in two summer sessions without petitioning his/her assigned advisor. A student can take 20 or more hours only with the advisor's and the coordinator for student affairs and curriculum's approval.

If on probation, a student shall not take more than 15 hours of coursework in an academic term; the Committee on Academic Standards may require that someone not take more than 12.

Withdrawal From Class Or University

All students enrolled in journalism courses may withdraw from a course with a W grade until Friday of the tenth week of classes (see the University calendar for the date). After that, you may withdraw only with the approval of the School of Journalism's Committee on Academic Standards and will receive a W or WU grade.

Journalism majors who wish to withdraw from the University after the tenth week of any term should report their intent to the Office of Student Life and are automatically suspended from the School of Journalism for a minimum of one term (not including a summer session) unless the late withdrawal results from illness. In such cases, one must present a written excuse at the time of withdrawal to avoid automatic suspension.

Internship/Practicum Credit

A number of internship (JRL 441) opportunities are available for summer credit; to a lesser extent, hours are available during the academic year. All students interested in this option must apply for it, must register in advance for the course, and must establish a contract with a major program head/designated coordinator, and the dean, who will report pass/fail grades from each supervisor. The contract, essentially an agreement that explains the terms under which credit will be given, describes the anticipated learning experience, including assignments, reports, type of supervision, and required evaluations by a job supervisor and by a member of the school's faculty.

No more than ten percent of a student's 30-38 journalism credits (typically one to three) can be earned via combined practica or an internship, in accordance with ACEJMC standards. Students who register for a three-hour internship are discouraged from taking other courses during the same term because such experiences require full-time work for a minimum of ten weeks (at least 300 hours). Except in special circumstances, students should seek only paid internships. Students for whom a full-time three-credit-hour internship cannot be arranged may have the option of taking a mini-internship or practicum (JRL 442) for one or two hours' credit.

The one-credit-hour practicum requires approximately ten hours per week for a minimum of ten weeks (or 100 hours) of supervised practical experience with an organization whose activities are related to the student's major. Two credit hours for the practicum requires approximately 20 hours per week of practical experience for a minimum of ten weeks (or 200 hours' work).

Identical qualifications and procedures are required for the internship and the practicum except that the student may take the practicum while enrolled in other SOJ and University courses. *Students may not take both an internship and a practicum or practica for credit.*

Job Placement

The School of Journalism faculty assist future graduates in finding desirable positions by acting as a placement clearinghouse for current students and alumni; the faculty also advise and assist students in the preparation of resumés and portfolios. Representatives of newspapers, magazines, public relations, broadcasting, and advertising firms frequently request that School of Journalism faculty provide applicants for job openings and internships.

Major Programs' Objectives

Advertising Program

Robyn Blakeman, M.L.A., Chair

The advertising curriculum is designed to prepare students for careers in the creation, sales, management, and production of advertising.

The minor or second concentration field(s) is subject to approval by your advisor; business administration is a common minor choice. Students in this major prepare for careers in advertising agencies, corporate advertising departments, direct marketing, retail advertising, promotion, and the media.

Broadcast News Program

Maryanne Reed, M.S.J., Chair

Students seeking careers in the broadcast news and information areas should pursue this curriculum.

The broadcast news program is supported by a complete telecommunications facility, including television and audio studios, and a videotape editing facility. However, the focus and the thrust of instruction in this curriculum stresses basic news writing, editorial judgment, and the principles and practices of radio and television news production.

The curriculum integrates the mechanics of broadcast journalism with the ethical principles and norms exhibited by professionals. Such preparation helps students to develop their own communication skills and to appreciate radio, television, cable, and motion pictures as communicative and journalistic arts. Additionally, these studies challenge the student's ability to evaluate and to criticize broadcast media functions, performance, responsibilities, and their influence in society.

Professional staff members of WVU's Office of Television Production Services and of West Virginia Public Radio and Television periodically serve as adjunct instructors and assist in some broadcast news courses.

The student's minor or second concentration field(s) must be approved by the advisor.

Journalism Education Program

Pamela D. Yagle, M.S.J., Chair

The School of Journalism has worked for a number of years with West Virginia journalism teachers and administrators to improve their instruction and school publications. An even greater effort has been made over the past decade through regional high school workshops, critiques of school papers, the West Virginia High School Journalism Competition, and individual consultation with newspaper and yearbook adviors by School of Journalism faculty.

One of the outgrowths of these cooperative efforts has been a certification program in journalism. The School of Journalism provides courses for that five-year master's program in the WVU College of Human Resources and Education, which requires a primary teaching field besides journalism.

News-Editorial Program

Ralph Hanson, Ph.D., Chair

The news-editorial program teaches fact-gathering, news and feature writing, beat reporting, editing, design, immersion reporting, journalism history and law, ethics, on-line research and writing, public affairs reporting, investigative reporting, plus editorial and critical writing. The program stems from the first journalism courses offered at WVU.

Most news-editorial graduates have found employment with newspapers, magazines, the Internet and on-line publications, and international press associations. Some graduates, however, have entered broadcasting or public relations; still others occupy writing and editing positions in scientific fields, business, industry, and government.

As a condition of graduation, news-editorial majors are required to have 500 or more column inches of bylined writing published in campus or off-campus news media. At least 100 of these inches must be published following the junior year. News-editorial students frequently earn a minor in political science, history, general English, creative writing English, sociology, anthropology, or business administration or a second concentration in psychology.

Public Relations Program

R. Ivan Pinnell, Ph.D., Chair

Public relations offers challenging opportunities to align the interests of industrial, non-profit, educational, medical, military, or charitable organizations with those of their publics.

The curriculum is organized to provide a comprehensive familiarity with specialized forms (brochures, reports, slides, speeches, and the like). In addition to public relations, students learn principles of persuasion and media technology.

Public relations majors are encouraged to select minors that will provide a deeper understanding of personal and interpersonal relationships (political science, sociology, anthropology, or business administration) or a second concentration field that will enhance the student's projected area of practice (psychology, general business, environment, health, or a science-related subject).

Curriculum Requirements

Suggested Four-Year Advertising Schedule

First Year

First Semester	Hrs.
JQE	N/A
MATH 121/126^	3
ENGL 101	3
Lab Science	4
HUM 101 (fall only)^^	3
JRL 101	3
MDS 103	1
Total	**17**

Second Semester	Hrs.
ENGL 102	3
Same Lab Science	4
HUM 102 (spring only)^^	3
HIST 152	3
PSYC 101	3
Total	**16**

Second Year

Third Semester	Hrs.
POLS 220	3
Foreign Language	3
ECON 201	3
HIST 153	3
ENGL (Lit: Cluster A only)	3
JRL 215	3
Total	**18**

Fourth Semester	Hrs.
Same Foreign Language	3
ECON 202	3
JRL 289	3
POLS 102	3
STAT 111	3
ADV 215	3
Total	**18**

Third Year

Fifth Semester	Hrs.
ADV 315#	3
ADV 403#	3
NE 428	3
Minor/2nd Concentration	3
SOCA 105/235/238 *or* **	3
ACCT 201/BUSA 340	3
Total	**18**

Sixth Semester	Hrs.
ADV 401/451	3
JRL 421	3
Minor/2nd Concentration	3
BUSA 320/330	3
PHIL (any Cluster A)	3
Total	**15**

Fourth Year

Seventh Semester	Hrs.
ENGL (Lit: Cluster A only)	3
Minor/2nd Concentration	6
PSYC 231/251 *or* Upper-Division SOCA	3
General Elective	0-3
Total	**12-15**

Eighth Semester	Hrs.
ADV 459	3
JRL Electives	0-8
Minor/2nd Concentration	3
General Elective	0-5
Total	**11-19**

^ = Other MATH courses may be accepted upon approval.
^^ = HUM 103, 104, and 293 are also acceptable.
* = STAT 211, 215, and ECON 225 are also accepted, depending upon one's math grade.
# = It is recommended these courses are taken concurrently.
** = any other foreign culture, minority, or gender course.
Note: The School of Journalism specifies many Liberal Studies Program courses. Some courses are available only once a year; it is the student's responsibility to arrange his/her schedule accordingly.

Suggested Four-Year Broadcast News Schedule

First Year

First Semester	Hrs.
JQE	N/A
MATH 121/126^	3
ENGL 101	3
Lab Science	4
HUM 101 (fall only)^^	3
JRL 101	3
Total	**16**

Second Semester	Hrs.
ENGL 102	3
Same Lab Science	4
HUM 102 (spring only)^^	3
HIST 152	3
PSYC 101	3
MDS 103	1
Total	**17**

Second Year

Third Semester	Hrs.
POLS 220	3
Foreign Language	3
ECON 201	3
HIST 153	3
ENGL (Lit: Cluster A only)	3
JRL 215	3
Total	**18**

Fourth Semester	Hrs.
Same Foreign Language	3
ECON 202	3
JRL 318	3
POLS 102	3
STAT111*	3
BN 215	3
Total	**18**

Third Year

Fifth Semester	Hrs.
BN 319	3
JRL 289	3
NE 428	3
SOCA 105/235/238 *or* **	3
ACCT 201/BUSA 340	3
COMM 103 *or* SPA 270 *or* THET 102	3
Total	**18**

Sixth Semester	Hrs.
BN 385	3
JRL 421	3
Minor/2nd Concentration	3
ENGL (Lit: Cluster A only)	3
PHIL (any Cluster A)	3
Total	**15**

Fourth Year

Seventh Semester	Hrs.
BN 386	3
JRL Electives	0-3
Minor/2nd Concentration	6
PSYC 231/251 *or* Upper-Division SOCA	3
Total	**12-15**

Eighth Semester	Hrs.
BN 487	3
JRL Electives	0-2
Minor/2nd Concentration	6
General Elective	0-5
Total	**11-16**

^ = Other MATH classes may be accepted upon approval.
^^ = HUM 103, 104, and 293 are also acceptable.
* = STAT 211, 215, and ECON 225 are also accepted, depending upon one's math grade.
** = any other foreign culture, minority, or gender course.
Note: The School of Journalism specifies many Liberal Studies Program courses. Some courses are available only once a year; it is the student's responsibility to arrange his/her schedule accordingly.

Suggested Four-Year News-Editorial Schedule

First Year

First Semester	Hrs.	Second Semester	Hrs.
JQE	N/A	ENGL 102	3
MATH 121/126^	3	Same Lab Science	4
ENGL 101	3	HUM 102 (spring only)^^	3
Lab Science	4	HIST 152	3
HUM 101 (fall only)^^	3	PSYC 101	3
JRL 101	3	MDS 103	1
Total	**16**	**Total**	**17**

Second Year

Third Semester	Hrs.	Fourth Semester	Hrs.
POLS 220	3	Same Foreign Language	3
Foreign Language	3	ECON 202	3
ECON 201	3	MINOR/2nd Concentration	3
HIST 153	3	POLS 102	3
ENGL (Lit: Cluster A only)	3	STAT 111*	3
JRL 215	3	JRL 318	3
Total	**18**	**Total**	**18**

Third Year

Fifth Semester	Hrs.	Sixth Semester	Hrs.
JRL 319#	3	NE 426***	3
NE 418#	3	NE 420/430 *or* JRL 421	3
JRL 289	3	Minor/2nd Concentration	3
ACCT 201/BUSA 340	3	ENGL (Lit: Cluster A only)	3
SOCA 105/235/238 *or* **	3	PHIL (any Cluster A)	3
POLS 260	3	JRL Elective	3
Total	**18**	**Total**	**18**

Fourth Year

Seventh Semester	Hrs.	Eighth Semester	Hrs.
NE 427 or JRL Elective****	3	NE 428	3
Minor/2nd Concentration	6	JRL Electives	0-5
PSYC 231/251 *or*	6	Minor/2nd Concentration	3
Upper-Division SOCA	3	General Elective	0-5
General Elective	0-3	**Total**	**11-16**
Total	12-15		

^ = Other MATH classes may be accepted upon approval.
^^ = HUM 103, 104, and 293 are also acceptable.
* = Stat 211, 215, and ECON 225 are also accepted, depending upon one's math grade.
# = It is recommended these courses are taken concurrently.
** = any other foreign culture, minority, or gender course.
***NE 426 may be available in only spring terms.
****NE 408 is not available every term.
Note: The School of Journalism specifies many Liberal Studies Program courses. Some courses are available only once a year; it is the student's responsibility to arrange his/her schedule accordingly.

Suggested Four-Year Public Relations Schedule

First Year

First Semester	Hrs.
JQE	N/A
MATH 121/126^	3
ENGL 101	3
Lab Science	4
HUM 101 (fall only)^^	3
JRL 101	3
MDS 103	1
Total	**17**

Second Semester	Hrs.
ENGL 102	3
Same Lab Science	4
HUM 102 (spring only)^^	3
HIST 152	3
PSYC 101	3
Total	**16**

Second Year

Third Semester	Hrs.
POLS 220	3
Foreign Language	3
ECON 201	3
HIST 153	3
ENGL (Lit: Cluster A only)	3
JRL 215	3
Total	**18**

Fourth Semester	Hrs.
Same Foreign Language	3
ECON 202	3
Minor/2nd Concentration	3
POLS 102	3
JRL 318	3
PR 215	3
Total	**18**

Third Year

Fifth Semester	Hrs.
PR 319/JRL 493A/JRL 493K/ ADV 493A	3
JRL 289	3
SOCA 105/235/238 *or* *	3
BUSA 340/ACCT 201	3
PHIL (any Cluster A)	3
General Elective	0-3
Total	**15-18**

Sixth Semester	Hrs.
PR 324	3
JRL 421 or NE 420/430	3
NE 428	3
MINOR/2nd Concentration	3
ENGL (Lit: Cluster A only)	3
STAT 111**	3
Total	**18**

Fourth Year

Seventh Semester	Hrs.
PR 422	3
Minor/2nd Concentration	6
COMM 103 *or* SPA 270	3
or THET 102	3
PSYC 231/251 *or* Upper-Division SOCA	3
Total	**15**

Eighth Semester	Hrs.
JRL Electives	0-8
Minor/2nd Concentration	3
General Elective	0-2
BUSA 320/330	3
Total	**11-16**

^ = Other MATH classes may be accepted upon approval.
^^ = HUM 103, 104, and 293 are also acceptable.
* = any other foreign culture, minority, or gender course.
** = STAT 211, 215, and ECON 225 are also accepted, depending upon one's math grade.
Note: The School of Journalism specifies many Liberal Studies Program courses. Some courses are available only once a year; it is the student's responsibility to arrange his/her schedule accordingly.

School of Dentistry

James J. Koelbl, Dean
Louise T. Veselicky, Senior Assistant Dean
Richard J. Crout, D.M.D., Associate Dean
Shelia S. Price, D.D.S., Assistant Dean
Frank H. Stevens, D.D.S., Assistant Dean
Gordon G. Keyes, D.D.S., Assistant Dean
Christina B. DeBiase, Ed.D., Assistant Dean and Director, Division of Dental Hygiene
www.hsc.wvu.edu/sod

Degree Offered

Bachelor of Science in Dental Hygiene

Admission

To get application and reference forms, please write to the Division of Dental Hygiene, West Virginia University, Morgantown, WV 26506, or to the Office of Admissions, Health Sciences Center, West Virginia University, Morgantown, WV 26506. As soon as possible in the year preceding the year you want to enter the program, you should apply and complete the aptitude tests. Forms for the following year are available in September.

If you have no previous study in higher education, you will apply for admission as a freshman at WVU. You must have a diploma from an accredited high school or preparatory school, and we expect you to have these courses listed on your high school transcript: four units of English, two units of algebra, one unit of plane geometry, one unit of biology, and one unit of chemistry.

We pay particular attention to scholastic achievement in science courses. We also expect applicants to rank in the upper half of their graduating classes. Physical strength with the ability to sit and stand as required, fine precision bilateral manipulative hand/motor skills, adequate visual acuity, eye/hand/foot coordination, and emotional stability are essential characteristics for individuals who wish to enter and continue in the dental hygiene program. They must meet other medical qualifications as required. Reasonable accommodation will be considered for students with special needs.

We require that you take the American College Testing Program (ACT) examination or the Scholastic Aptitude Test (SAT). Personal references are required to be submitted on the reference form. All three references must be sent by the writer of the reference directly to the Division of Dental Hygiene. The Dental Hygiene Admissions Committee reviews all applications. If you are among the most qualified, we will invite you to come to the campus for a personal interview. You will receive a letter stating the date, time, and place of an interview. Competition for admission is intense. Preference is given to residents of West Virginia.

Degree Completion Program

If you are a registered dental hygienist, you can be admitted directly to the Division of Dental Hygiene as a full-time or a part-time student. To be eligible for the degree completion program, you must have a certificate or associate's degree from an accredited dental hygiene program. You can transfer lower-division credits (see "Suggested Dental Hygiene Curriculum"). Your acceptance and placement in the program depend upon your academic record and upon the number of spaces available.

When you apply, we ask you to include complete records of previous study. An official transcript needs to be mailed to us by the registrar of your previous school. Include catalog descriptions of the courses taken. If you are currently enrolled in a certificate or associate's degree program, include your program of study. You are responsible for the submission of a complete record package. You can enter the degree completion program twice a year. Applications can be obtained after September 1 of the year preceding application to the program. The *West Virginia University Health Sciences Center Catalog* contains complete information about the program in dental hygiene.

Suggested Dental Hygiene Curriculum

First Year

First Semester	Hrs.
ORIN 101	1
ENGL 101	3
Cluster B (COMM 100 & 102)	3
MATH 126	3
CHEM 111	4
DTHY 101	2
Total	**16**

Second Semester	Hrs.
BIOL 102	3
BIOL 104	1
CHEM 112	4
DTHY 185 *Oral Anatomy*	3
HN&F 171 *Nutrition*	3
Cluster B (PSYCH 101)	3
Total	**17**

Second Year

First Semester	Hrs.
NBAN 301	4
Cluster B (SOC 101)	3
DTHY 205 *Theory & Practice of Prevent.*	2
MBIM 200	3
Cluster A	3
Cluster B (PSYC 241)	3
Total	**18**

Second Semester	Hrs.
PSIO 241	4
NBAN 309 *Histology*	2
PCOL 260	3
DTHY 225 *Dent. Hy. Tech.*	4
ENGL 102	3
DTHY 220 *Dent. Nrsg. Tech.*	1
Total	**17**

Third Year

First Semester	Hrs.
DTHY 363 *Periodontics*	1
PATH 301	2
DTHY 320 *Dent. Radiol.*	2
DTHY 300 *Anesthesiology*	1
DTHY 301 *Public Health*	2
DTHY 360 *Dent. Materials*	3
DTHY 370 *Clin. Methods*	2
DTHY 372 *Clin. Dent. Hy.*	2
DTHY 380 *Rural Health*	2
DTHY 366 *Dental Literature*	1
Total	**18**

Second Semester	Hrs.
DTHY 364 *Periodontics*	2
DTHY 378 *Did. Tching. Methods*	2
PATH 302	3
DTHY 361 *Exp. Functions*	2
Cluster A	3
DTHY 302 *Dent. Health Ed.*	3
DTHY 374 *Clin. Dent. Hy.*	2
DTHY 322 *Radiology*	1
Total	**18**

Summer I	Hrs.
DTHY 491	3
Total	**3**

Summer II	Hrs.
DTHY 493 Clinic	1
DTHY 494 *Research Seminar*	1
Total	**2**

Fourth Year

First Semester	Hrs.
DTHY 404 *Adv. Clin. DH*	1
DTHY 405 *Adv. Clin. DH*	4
DTHY 402 *Dent. Hy. Pract.*	2
Cluster A	3
DTHY 450 *Dent. Health Ed. II*	2
DTHY 478 *Clin. Tching. Methods*	2
DH Electives 490, 491, 493	2
Total	**16**

Second Semester	Hrs.
DTHY 406 *Adv. Clin. DH Meth.*	3-4
DTHY 407 *Adv. Clin. DH Meth*	2
DTHY 451 *Dent. Health Ed. III*	2
DTHY 494 *Clin. Did. Sem.*	1
DTHY Electives 490, 491, 493	3
Cluster A	3
Total	**14-15**

School of Medicine

Robert M. D'Alessandri, M.D., Dean
www.hsc.wvu.edu/som

Medical Technology

Karen S. Long, M.S., Associate Professor and Interim Program Director

Degree Offered

Bachelor of Science in Medical Technology

Nature of Program

The undergraduate program in medical technology is administered by the School of Medicine. Students are admitted into the bachelor of science program after completing two years of premedical technology in an accredited college or university. The WVU Medical Technology program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). Graduates are eligible for certification by the Board of Registry of the American Society of Clinical Pathologists (ASCP) and by the National Credentialing Agency for Laboratory Personnel (NCA).

The undergraduate curriculum includes the pre-medical technology program, which is offered in the WVU College of Arts and Sciences and at WVU Potomac State College in Keyser, WV, and the professional program in the medical technology program in the School of Medicine.

Since the last two years are professional in nature, students must be enrolled in the WVU School of Medicine for this entire period. The work of the junior year (the first year in the medical technology program) includes courses to introduce the student to the medical sciences and to prepare the student for the work of the senior year. During the senior year (the second year in the medical technology program), the student receives both didactic instruction and practical experience in Ruby Memorial Hospital laboratories (WVU Hospitals, Inc.). Students may be required to complete part of their clinical rotations at an extramural site in West Virginia.

Ruby Memorial Hospital is located on the University Health Sciences Center campus and is part of the Robert C. Byrd Health Sciences Center of West Virginia University. The hospital is a tertiary care teaching hospital and referral center. It is a 376-bed facility. The clinical laboratories are on the third floor and occupy approximately one-fourth of the floor. The laboratories are full-service including hematology, chemistry, special chemistry, radioimmunoassay, blood bank, microbiology, mycology, virology, and immunology.

Other Programs

An articulation program is available for certified medical laboratory technicians who desire to complete requirements for a bachelor of science degree. Further information may be obtained by contacting the Medical Technology Program Office.

A part-time curriculum is available for the third and fourth years of the program. Students must meet the admission requirements and application deadlines for full-time students. For further information, contact the Medical Technology Program Office.

Admission to the Pre-Medical Technology Program

Students in the pre-medical technology program must meet the admission criteria of WVU and are advised by the Undergraduate Academic Services Center.

Qualified applicants may enter the pre-medical technology program at the beginning of any semester, but the professional sequence outlined is based on entrance in the fall semester of year three. Admission to the pre-medical technology program does not assure admission to the professional program. Prospective students should take mathematics, chemistry, physics, and biology in high school.

Do not take courses such as bacteriology, parasitology, and anatomy until you complete the sophomore year. Foreign language is recommended for students who plan to do graduate work.

Direct Admit Program

Students may be admitted directly into the medical technology program as freshmen with a high school grade point average of 3.75. They are advised by the medical technology program advisor and are automatically admitted to the professional program as long as they meet all admission requirements listed below. MTEC 100, 101, 200, and 201 are required courses for direct admit students.

Admission to the Professional Program

Please apply for admission into the junior year (first year in the undergraduate medical technology program) before the second semester of the sophomore year in college. Students at WVU or WVU Potomac State College are not transferred automatically from the pre-professional course (first two years) to the professional course (third and fourth years). Students are selectively admitted to the program for their final two years of work.

Requirements for admission to the medical technology program include course requirements, grade point average, a personal interview, letters of recommendation, and scores on the Allied Health Professions Admission Test (AHPAT).

The course requirements (prerequisites) are:

- English: six hours of composition and rhetoric (ENGL 101 and 102).
- Biology: eight hours of general biology (BIOL 101, 102, 103, and 104).
- Chemistry: eight hours of inorganic (CHEM 115 and 116), and four hours of organic (CHEM 231).*
- Physics: eight hours of general physics (PHYS 101 and 102).
- Mathematics: six hours to include minimal requirements of algebra and trigonometry (MATH 126 and 128).
- STAT 211
- LSP: 24 hours of electives: (12 hours of Cluster A and 12 hours of Cluster B).

*Transfer students must complete an organic chemistry course(s) (eight hours) that includes aliphatic and aromatic compounds. The course must include a laboratory.

Applicants should have a minimum grade point average of 2.5 (cumulative and science). Applicants may be admitted on probation if the grade point average (cumulative or science) is less than 2.5. Applicants with less than a 2.0 grade point average, either cumulative or science, will not be admitted. A grade point average of 2.5 or above does not necessarily assure admission. A personal interview with the Medical Technology Admission Committee may be required. Two letters of recommendation from instructors in physics, chemistry, or biology are required. Scores on the Allied Health Professions Admissions Test (AHPAT) are required.

Admission of international students is in compliance with WVU regulations. At least one science course (chemistry, physics, or biology) must be completed at an institution of higher education in the United States.

Application Procedure

Application forms for admission to the professional program are available after December 1 from the Office of the Assistant Director of Admissions and Records, WVU Health Sciences Center, P.O. Box 9815, Morgantown, WV 26506-9815. There is an application fee of $10. The priority date for returning the application form is January 15. The deadline date is February 1 if the student expects to enter the program the next fall semester.

Students at WVU or WVU Potomac State College are not transferred automatically from the pre-professional course to the professional course. Students are selectively admitted to the program.

Pre-Medical Technology Curriculum Plan

First Year

First Semester	Hrs.
CHEM 115 *Inorganic*	4
Elective*	3
MATH 126 *Algebra*	3
BIOL 101 and 103	4
MTEC 100** *Orientation*	1
Total	**15**

Second Semester	Hrs.
CHEM 116 *Inorganic*	4
ENGL 101 *Comp. and Rhet.*	3
Elective or STAT 211	3
BIOL 102 and 104	4
MATH 128 *Trigonometry*	3
METC 101**	1
Total	**18**

Second Year

First Semester	Hrs.
Electives*	9
PHYS 101	4
ENGL 102 *Comp. and Rhet.*	3
MTEC 200***	1
Total	**17**

Second Semester	Hrs.
CHEM 231 *Organic*	4
Electives*	6
PHYS 102	4
STAT 211 or Elective	3
METC 201***	1
Total	**18**

*Electives from Cluster A and Cluster B are to be selected to meet the Liberal Studies Program requirements.
**MTEC 100/101 are not required courses. It is highly recommended that all students take these courses.
***MTEC 200/201 are required courses for direct admit students and optional for pre-medical technology students.

Medical Technology

Third Year (Medical Technology I)

First Semester	Hrs.
MTEC 300	4
MTEC 302	2
BIOC 339	5
PHYS 441	4
Elective	3
Total	**18**

Second Semester	Hrs.
MBIM 327	1
MBIM 323	5
MTEC 301	4
MTEC 310	1
MTEC 381*	2
MTEC 329	1
MTEC 465	2
Total	**16**

*Writing course

Fourth Year (Medical Technology II)

Students receive didactic and clinical instruction in the University Hospitals laboratories after completion of the junior year. The course of study begins with the summer session and covers three academic semesters. If the student has excessive absences during the senior year, competencies not completed must be made up at the end of the school year.

Students register for the following courses during the three semesters of study.

Course Requirements	Hrs.
MTEC 400 *Orientation*	No Credit
MTEC 401 *Phlebotomy*	1
MTEC 402 *Rural Health Practicum*	1
MTEC 403 *Community Service Practicum*	1
MTEC 420 *Immunohematology and Blood Banking*	2
MTEC 421 *Immunohematology and Blood Banking Laboratory*	5
MTEC 430 *Clinical Chemistry*	2
MTEC 431 *Clinical Chemistry Laboratory*	5
MTEC 440 *Clinical Hematology*	2
MTEC 441 *Clinical Hematology Laboratory*	5
MTEC 450 *Clinical Microbiology*	2
MTEC 451 *Clinical Microbiology Laboratory*	5
MTEC 460 *Instrumentation*	2
MTEC 465 *Laboratory Management*	2
METC 466 *Lab Management*	2
MTEC 470 *Clinical Microscopy*	1
MTEC 471 *Clinical Microscopy Laboratory*	1
MTEC 475 *Medical Relevance of Laboratory Analysis and Capstone*	2
MTEC 480 *Clinical Immunology*	2
MTEC 481 *Clinical Immunology Laboratory*	1
Total	**44**

Graduation Requirements

Junior Year

Students must maintain a grade point average of 2.0 for each semester to advance to the senior year. Any student with one or more Fs in a semester, or more than one D at the end of a semester or at the end of the junior year, will be suspended from the program. The Academic and Professional Standards Committee must recommend any student for advancement to the senior year. A satisfactory grade point average does not assure advancement.

Senior Year

A student must maintain a grade point average of 2.0 for each semester of the senior year. Graduation requires satisfactory completion of all academic work and the recommendation of the faculty of the School of Medicine.

Career Opportunities

Notices of employment opportunities are received by the program office and posted for student use.

The market for medical technology graduates varies from state to state and in areas in a particular state. Many graduates are employed in a hospital or clinical laboratory setting as a generalist while others specialize in a particular area such as chemistry, microbiology, blood banking, or hematology. Other graduates work in physicians' offices, clinics, reference laboratories, public health agencies, research, industry, or education. There is currently a national shortage of medical technologists and this is expected to increase over the next five to 15 years.

Human Performance and Applied Exercise Science

Three divisions make up the Department of Human Performance and Applied Exercise Science:

Division of Exercise Physiology
Includes both an undergraduate and a graduate program.

Division of Occupational Therapy
Includes an entry-level master's program.

Exercise Physiology

Rachel A. Yeater, Ph.D., Professor and Chair

Degree Offered

Bachelor of Science

Introduction

The WVU exercise physiology program was established in the Robert C. Byrd Health Sciences Center's School of Medicine in July 1993. The program offers a four-year curriculum leading to a bachelor of science degree in exercise physiology with the option of an emphasis area in aquatic therapy or health profession. The bachelor of science in exercise physiology is a preparatory program for graduate or professional school. Graduates continue their education in areas such as exercise physiology, physical therapy, occupational therapy, or medicine. The program is designed to provide students a background in basic science and exercise physiology, as well as courses in nutrition, athletic training, first aid and emergency care, and business.

The Profession

Exercise physiologists are trained to evaluate people in the areas of cardiovascular fitness, muscular strength and endurance, flexibility, neuromuscular integration, and body composition. They are also trained to provide exercise programs based on the results of these evaluations, which are designed to increase the functional capacity of the participants. Exercise physiologists work with athletes, patients, or healthy participants in the areas of disease prevention in wellness programs, rehabilitation in hospital settings, or research. The bachelor of science program is a preparatory program for graduate school. Graduates of this program continue their studies in exercise physiology, physical therapy, occupational therapy, medicine, or other health-related careers. Graduates of the master of science or doctoral program find employment in corporate wellness, hospital rehabilitation, or higher education. Additionally, they may be employed in a wide variety of private, community, state, and national agencies. Exercise physiology is an evolving field that is becoming increasingly important with the integration of preventive medicine into the health-care system. Employment opportunities are expanding and increase with experience and level of education.

Bachelor of Science

Admission

Students must meet the minimum requirements for WVU for admission to the program. All coursework completed prior to transfer to the exercise physiology program requires at least a 2.75 cumulative grade point average and a grade of C or better in all required courses.

Program Requirements for General Exercise Physiology

Students must complete the University requirements for the Liberal Studies Program (including 12 hours of Cluster A and 12 hours of Cluster B). Students must complete the following courses or course equivalents in theory and foundation to meet the exercise physiology program requirements:

Course Requirements	Hrs.
CHPR 172 *First Aid and Emergency Care*	3
PET 175 *Motor Learning and Development*	3
ATTR 121 *Sport Injury Control and Management*	3
ATTR 219 *Gross Anatomy*	3
EXPH 293 *Introduction to Exercise Physiology I*	1
EXPH 293 A *Introduction to Exercise Physiology II*	1
EXPH 240 *Medical Terminology*	1
EXPH 364 *Kinesiology*	3
EXPH 365 *Exercise Physiology I*	3
EXPH 368 *Laboratory Techniques and Methods I*	3
EXPH 493 D *Strength and Conditioning Methods*	3
EXPH 491 *Professional Field Experience*	6
EXPH 496 *Senior Thesis*	3
MATH 126 *College Algebra**	3
MATH 128 *Plane Trigonometry**	3
PHYS 101 *Introductory Physics*	4
PHYS 102 *Introductory Physics*	4
CHEM 115 *Fundamentals of Chemistry*	4
CHEM 116 *Fundamentals of Chemistry*	4
CHEM 231 *Organic Brief Course*	4
CHEM 234 & 236 *Organic Chemistry II*	4
BIOL 101 & 103 *General Biology and Lab***	4
BIOL 102 & 104 *General Biology and Lab***	4
PSIO 241 *Elementary Physiology*	4
HN&F 171 *Introduction to Human Nutrition*	3
EXPH 493 *Exercise Management*	3
STAT 211 *Elementary Statistical Inference*	3
Suggested Electives: BIOL 219 *The Living Cell*	4
and *Biochemistry* 339	3
Total	**94**

*Students may take MATH 129, 150, or 155 in place of MATH 126 and 128.
**Students may take BIOL 115 and 117 in place of BIOL 101-104.

Students must have a grade of C or better in all required courses. Science courses must be taken at WVU. Students must have a minimum of 128 hours to graduate. Students must maintain a cumulative GPA of 2.5 or better to remain in the program.

Exercise Physiology Curriculum Plan

Freshman Year

First Semester	Hrs.
ENGL 101	3
PSYC 101 *Intro. to Psychology*	6
MATH 126 *Algebra*	3
BIOL 101 & 103	4
EXPH 293 *Intro. to EXPH I*	1
Total	**17**

Second Semester	Hrs.
MATH 128 *Trig.*	3
BIOL 102 & 104	4
Cluster A and B	6
ATTR 121 *Athletic Training*	3
EXPH 293A *Intro. to EXPH II*	1
Total	**17**

Sophomore Year

First Semester	Hrs.
CHEM 115	4
PHYS 101	4
Cluster	3
EXPH 364 *Kinesiology*	3
ENGL 102	3
Total	**17**

Second Semester	Hrs.
CHEM 116	4
PHYS 102	4
PHYS 241 *Human Psysiology*	4
CHPR 172 *First Aid & Emergency Care*	2
Total	**14**

Junior Year

First Semester	Hrs.
EXPH 365 *Exercise Physiology I*	3
EXPH 368 *Lab Tech. & Methods I*	3
ATTR 219 *Anatomy*	3
PSYC 241 *Human Growth & Dev.*	6
Cluster	3
Total	**18**

Second Semester	Hrs.
CHEM 231 *Organic Chem. Brief*	4
EXPH 493D *Strength/Cond. Meth.*	3
ENGL 305 *Scientific Writing*	4
HN&F 171 *Nutrition*	3
Elective	3
Total	**17**

Senior Year

First Semester	Hrs.
EXPH 491 *Prof. Field Exp.*	3
EXPH 496 *Senior Thesis*	3
STAT 211	3
Electives (e.g., Rsch. methods)	3
Total	**12**

Second Semester	Hrs.
EXPH 491 *Prof. Field Exp.*	3
EXPH 493 *Exercise Management*	3
Cluster	3
Electives	6
Total	**15**

(Suggested electives: BIOL 219 *The Living Cell* (4 hrs.) and 339 *Biochemistry* (3 hrs.)

*MATH 129, 150, or 155 can be substituted for MATH 126 and 128.
**BIOL 115 and 117 can be substituted for BIOL 101-104.
Students may also choose an emphasis in health professions. This program prepares the student to continue their education in graduate or professional schools. An aquatic therapy emphasis is also available for students who wish to pursue a clinical career.

Occupational Therapy

Randy P. McCombie, Ph.D., OTR/L, Chair

Degree Offered

Master of Occupational Therapy

Introduction

In fall 1993, the Board of Trustees approved the establishment of a new master's degree program at WVU, leading to an entry-level master's degree in occupational therapy. The program accepted its first students into the professional program in the fall semester of 1996. The academic and fieldwork program requires three years to complete. Prior to application, students are required to complete 54 hours of prerequisite courses, which in most instances will take approximately two years to fulfill.

The Profession

Occupational therapy is a health profession whose services are provided to people of all ages with physical, mental, or developmental disabilities. The purpose of occupational therapy is to help individuals achieve a maximum level of independence. The focus is on developing the capacity to function in all activities (occupations) of daily life, including self care, work, and leisure; hence the name *occupational* therapy.

Occupational therapy is a health and rehabilitation profession designed to help people regain and build skills that are important for health, well-being, security, and happiness.

Occupational therapists work with people of all ages who, because of physical, developmental, social, or emotional deficits, need specialized assistance in learning skills to enable them to lead independent, productive, and satisfying lives.

Occupational therapists work in schools, hospitals, rehabilitation centers, home health agencies, skilled nursing homes, and private practice.

Accreditation Status

WVU's Division of Occupational Therapy has been awarded accreditation status by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at 4720 Montgomery Lane, P.O. Box 31220, Bethesda, MD 20824-1220. AOTA's phone number is (301) 652-AOTA. Graduates of the program are able to sit for the National Certification Examination for the Occupational Therapist administered by the National Board for Certification in Occupational Therapy (NBCOT). For more information, NBCOT can be contacted at (301) 990-7979. After successful completion of this exam, the individual will be an occupational therapist, registered (OTR). Most states require licensure in order to practice; however, state licenses are usually based on the results of the NBCOT certification examination.

Admissions Process

This includes obtaining an application packet available December 1 from the Admissions and Records Office, (304) 293-3521, and completing that packet by February 15. A personal interview may be required.

College Prerequisite Courses	Hrs.
ENGL 101	3
ENGL 102	3
PSYC 101	3
PSYC 241	3
PSYC 281	3
SOCA 101 *or* SOCA 105	3
BIOL 101 and BIOL 103	4
BIOL 102 and BIOL 104	4
MATH 126	3
PHYS 101	4
STAT 211	3
COMM 100	1
COMM 102	2
Fulfillment of WVU's foreign or minority cultures requirement	3
Completion of WVU's LSP requirements—Cluster A courses	12
Total	**54**

WVU students must consult the Student Advising Center prior to enrolling in prerequisite courses. These courses may be taken at any institution which offers equivalent courses. Any questions regarding prerequisite courses may be directed to the Office of Academic Advising, (304) 293-5805. Equivalence may be determined by contacting the transfer desk, Admissions and Records, West Virginia University, P.O. Box 6009, Morgantown, WV 26506-6009.

Admission Standards

Normally, students apply to the program during their second year of college. They must have a minimum of 54 hours of college credit which includes the prerequisites listed above. Students who already have a degree in another field are also eligible to apply. All applicants must meet the following criteria.

- Minimum GPA of 3.0, overall and prerequisites.
- Minimum of 60 hours of volunteer or work experience with people with disabilities is required. A minimum of 45 of those hours must be with a licensed occupational therapist (OTR/L) and/or a certified occupational therapy assistant (COTA).
- Two recommendation forms are also required, one from an occupational therapist or COTA who supervised the volunteer/work experiences and the other from a professor who has recently taught the applicant.
- Completion of *all* prerequisite courses by the end of the semester of application (normally, second semester of sophomore year) is normally required.

What to Expect

Like many professional programs, the curriculum in the master's entry-level occupational therapy program is fairly fixed and intense. The first professional year will include courses in basic sciences and introductory professional courses. The second and third professional years will deal more specifically with training in occupational therapy theory and practice as administered across a wide variety of settings. The professional curriculum includes two off-campus, full-time clinical experiences known as fieldwork. Students are financially responsible for transportation, housing, and meal expenses related to clinical assignments.

Occupational Therapy Curriculum Plan

Junior Year

Summer Session II	Hrs.
OTH 300	4
OTH 480	1
Total	**5**

First Semester	Hrs.
PSIO 441	4
OTH 301	3
OTH 302	2
OTH 303	2
OTH 304	4
OTH 306	4
Total	**19**

Second Semester	Hrs.
OTH 307	3
OTH 308	4
OTH 321	3
OTH 360	3
OTH 406	3
OTH 480	1
Total	**17**

Senior Year

First Semester	Hrs.
OTH 384	2
OTH 401	2
OTH 417	3
OTH 430	3
OTH 435	3
OTH 480	1
OTH 493	2
OTH 497	1
Total	**17**

Second Semester	Hrs.
OTH 385	2
OTH 408	3
OTH 416	2
OTH 419	3
OTH 432	4
OTH 480	1
OTH 493 A	2
OTH 497	1
Total	**18**

Graduate Year

Summer 1-2	Hrs.
OTH 540	6
Total	**6**

First Semester	Hrs.
OTH 480	1
OTH 500	3
OTH 503	4
OTH 505	3
OTH 520	3
OTH 551	3
OTH 697	2
Total	**19**

Second Semester	Hrs.
Weeks 1-4	
OTH 480	1
OTH 501	3
OTH 550	3
OTH 697	2
Weeks 5-16	
OTH 640	6
Total	**15**

School of Nursing

E. Jane Martin, Ph.D., R.N., F.A.A.N., Dean
Mary Jane Smith, Ph.D., R.N., Associate Dean for Graduate Academic Affairs
Nancy Alfred, D.S.N., R.N., Associate Dean for Undergraduate Academic Affairs
Cynthia Armstrong Persily, Ph.D., R.N., Associate Dean for Academic Affairs, Southern Region, Chair, Charleston Division
Suzanne W. Gross, Ph.D., R.N., Assistant Dean for Student Services
www.hsc.wvu.edu/son

Degree Offered

Bachelor of Science in Nursing

Nature of Program

The School of Nursing undergraduate program in nursing is recognized by health-care agencies as providing excellent preparation for the nursing profession. Our graduates are in great demand and enjoy a large number of career opportunities. The B.S.N. curriculum includes courses in the humanities, social sciences, basic sciences, and nursing science. These courses are taken in conjunction with nursing clinical courses that enable students to apply their learning to actual client and family and community situations that warrant nursing intervention. The curriculum has been carefully designed to equip graduates to begin professional nursing practice with clients of all ages in any health-care setting where there is a position for the professional nurse starting a career. The program provides an excellent foundation for graduate study in nursing and other fields.

The baccalaureate program (B.S.N.) is available for high school graduates who aspire to a career in nursing (basic students) and to registered nurses RNs who are licensed graduates of associate's degree or diploma nursing programs seeking to continue their career development. The basic B.S.N. program can be completed in four years at WVU's Morgantown campus or at West Virginia University Institute of Technology (WVU Tech). Consortium programs with Glenville State College and Potomac State College of WVU allow students to complete the first two years at those schools. Glenville students complete the program at WVU Tech; Potomac State students complete the program at WVU.

Registered nurses can complete the B.S.N. requirements at WVU in Morgantown, at WVU Tech, or at WVU at Parkersburg. Nursing courses for RN students are designed for completion in three semesters of full-time study. The majority of courses are web offerings. Credit may be earned by enrollment, College Entrance Examination Board Advanced Placement Program, and by advanced standing examination.

A B.S./B.A. to B.S.N./M.S.N. accelerated program is available for the college graduate with a degree in a field other than nursing. Following 18 months of continuous enrollment, students attain the B.S.N. degree and are eligible to take the R.N. licensing examination. Students wishing to complete the M.S.N. requirements continue in the program, enrolling for an additional three semesters and one summer session of graduate coursework.

In keeping with the University's commitment to the West Virginia Rural Health Education Partnerships (WVRHEP) program and to improving health care for all West Virginians, all health sciences students in state-supported schools complete a rural clinical practice requirement of at least three months duration as part of degree requirements. Nursing students complete the rural clinical practice requirement during their senior year.

Further information about the B.S.N. program or the M.S.N. and D.S.N. graduate programs in nursing may be obtained from the School of Nursing web site at www.hsc.wvu.edu/son or by contacting the WVU School of Nursing Office of Student Services, 6702 Health Sciences South, P.O. Box 9600, Morgantown, WV 26506-9600; telephone (304) 293-1386 or (toll free) 1-866-WVUNURS.

Accreditation

Initial accreditation was received with graduation of the first class in 1964. The baccalaureate program in nursing is fully accredited by the Council of Collegiate Nursing Education, the national accrediting agency.

Fees, Expenses, Housing, Transportation, and Immunization

Students enrolling at the Morgantown campus pay fees which are detailed in the *WVU Health Sciences Center Catalog*. Special fees and deposits are also required. Students enrolling at other sites pay the fees shown in the catalog for that site. *Fees are subject to change without notice.* Students' expenses vary according to the course of study and individual needs. Information concerning financial assistance, application forms, and the Free Application for Federal Student Aid (FAFSA) form may be obtained from our financial aid web site www.hsc.wvu.edu/fin/ or by contacting the HSC Financial Aid Office, Health Sciences North, P.O. Box 9810, Morgantown, WV 26506-9810; telephone (304) 293-3706.

The University Housing and Residence Life Office, telephone (304) 293-3621, provides information concerning University-owned housing. The Student Life Office in E. Moore Hall, telephone (304) 293-5611, provides information concerning privately owned, off-campus housing.

Students are expected to provide their own transportation, equipment, and instruments for the clinical courses. Some clinical experiences require travel in a multi-county area.

Proof of specific immunizations is required for all health sciences students.

Scholarships

The School of Nursing offers several scholarships. These scholarships are administered by the University's Student Financial Aid Office and require completion of the Free Application for Federal Student Aid (FAFSA) form in order to be considered for financial aid.

Admission to Basic Program

Admission to the Basic Program is based on a combination of high school grade point average (unweighted 4.0 scale) and composite ACT or total SAT scores. While preference is given to West Virginia residents, qualified students from other states are encouraged to apply. The following table summarizes the admission requirements.

GPA (Range)	Composite ACT	Total SAT
2.70 – 2.99	22	1030
3.00 – 3.49	21	990
3.50 – 4.00	20	950

In addition, students must have completed these high school credits required by the University:

Units (Years)

- 4 English (including courses in grammar, composition, and literature)
- 3 Social studies (including U.S. history)
- 3 College preparatory mathematics (algebra I, algebra II, and plane geometry)
- 2 Laboratory science (biology, chemistry, physics, or other courses with a strong laboratory science orientation)

First-Year Basic Student Curriculum

All freshman basic students admitted to the school complete a common curriculum designed to provide the foundation for success in subsequent nursing courses.

First Year

First Semester	Hrs.
CHEM 111	4
PSYC 101	3
SOCA 101 *or* 105 *or* 107	3
HN&F 171	3
MATH 124, 126 or Cluster A	3
Orientation 101	1
Total	**17**

Second Semester	Hrs.
CHEM 112	4
ENGL 101	3
BIOL 102 and 104	4
PSYC 241	3
NSG 110	3
Total	**17**

Students who have not completed the first-year curriculum by the end of the third semester will be required to transfer out of the School of Nursing.

Transfer Students

Students wishing to transfer into nursing from other non-nursing programs must have a GPA of at least 2.5 in all college work attempted. Students with nursing credit from an accredited college or university are eligible for consideration for transfer admission by presenting a record of courses comparable to those required in this curriculum and meeting other School of Nursing admission requirements. These students must provide a statement of good standing from the nursing program in which they are currently enrolled. Acceptance and placement in the program is dependent on the individual's academic record and the number of spaces available. Complete applications for transfer, including transcripts, must be received no later than one month before the start of the entering semester. Transfer applications go to: Nursing Secretary, HSC Office of Admissions and Records, 1170 WVU Health Sciences Center North, P.O. Box 9815, Morgantown, WV 26506-9815.

Admission for R.N.-B.S.N. Program

An unrestricted license to practice nursing and a grade point average of 2.5 or better on all college work attempted are required to be eligible for admission consideration. Acceptance and placement in the program are dependent upon the individual's academic record and the number of spaces available. Application forms for the Morgantown campus may be obtained from: Nursing Secretary, Health Sciences Center Office of Admissions and Records, 1170 WVU Health Sciences Center North, P.O. Box 9815, Morgantown, WV 26506-9815. Application forms for the WVU Tech and WVU at Parkersburg sites may be obtained from the Office of Admissions and Records or Department of Nursing at those sites.

Admission for B.S./B.A. to B.S.N./M.S.N. Accelerated Program

For admission criteria and application process on-line at www.hsc.wvu.edu/son.

Admission Petitions

Students not meeting the minimum admission and transfer requirements for basic and RN students as described above may request to be admitted to the school by written petition to the dean.

Academic Standards and Graduation Requirements

To be in good academic standing, students must:

- Maintain a cumulative grade point average of 2.5 or better in all college work attempted.
- Pass all courses with a grade of C or better.

A student who receives a grade of D, F, WU, or W in a required nursing course may repeat that nursing course once. A student may repeat only one nursing course. Students must complete with a grade of C or better any nursing course in which a grade of D, F, WU, or W has been received. Students who do not maintain a cumulative GPA of 2.5 or better will be placed on probation for one semester. Students on probation who do not raise their cumulative GPA to 2.5 or better after one semester will be dismissed from the School of Nursing. Nursing courses and pre- and co-requisite courses in which students earn a grade of D, F, WU, or W must be repeated prior to the student's progression to the next course/s in the nursing sequence. Students who repeat a nursing course and earn a grade of D, F, WU, or W will be dismissed from the school. Any general education course that is not a pre- or co-requisite of nursing courses and in which a grade of D has been earned must be repeated prior to graduation if it is to be counted toward graduation requirements. The bachelor of science in nursing degree is conferred upon completion of 136 hours and all required courses.

Curriculum for the Basic Student
B.S.N. Suggested Plan of Progression (Morgantown)

First Year
As listed on page 255.

Second Year

First Semester	Hrs.	Second Semester	Hrs.
NSG 221	3	NSG 241	2
NSG 223	1	NSG 243	2
NSG 225	3	NSG 245	4
ANAT 301	4	PSIO 241	4
MBIM 200	3	PHAR 260	3
ENGL 102	3	NSG 361	3
Total	**17**	**Total**	**18**

Third Year

First Semester	Hrs.	Second Semester	Hrs.
NSG 332	5	NSG 351	2
NSG 333	2	NSG 353	2
NSG 335	5	NSG 355	5
Cluster A/B	3	NSG 356	3
STAT 211	3	NSG 369W	1
Total	**18**	Cluster A/B	3-6
		Total	**16-19**

Fourth Year

First Semester	Hrs.	Second Semester	Hrs.
NSG 421	3	NSG 441	3
NSG 423	2	NSG 443	2
NSG 425	6	NSG 445	6
NSG 476	3	NSG 493 (NCLEX Review)	1
NSG 493 (NCLEX Review)	1	Cluster A	3
Cluster A	3	**Total**	**15**
Total	**18**		

The sequence of courses may vary from campus to campus. Certification in school health nursing is available to all students who meet additional course and experiential requirements.

Curriculum for the Registered Nurse Student

Nursing courses in the R.N. to B.S.N. program are designed for completion in three semesters of full-time study. The majority of the courses are offered as web courses. The associate's degree graduate will transfer in 50 hours of lower-division undifferentiated nursing credit. Diploma school graduates may earn up to 50 hours of credit by successfully passing selected examinations with a grade of C or better. If a grade of C is not achieved, a specific individual remediation plan will be developed. Any remediation plan must be satisfactorily completed prior to enrollment in upper-division nursing courses.

A minimum of 30 hours of general education courses that meet the University Liberal Studies Program and School of Nursing requirements should be completed before enrolling in the first nursing courses. All registered nurse students must establish credit by enrollment, challenge, or acceptable CLEP examinations in:

	Hrs.
English 101 and 102	6
Statistics	3
Cluster A	12
Cluster B	12
Cluster C	12
Total	**45**

Cluster B must include psychology, growth and development, and a sociology course. Cluster C may be selected from chemistry, biology, nutrition, anatomy, physiology, microbiology, pharmacology, and computer science. At least one course must include a laboratory.

Completion of additional general education courses beyond the 30 hours is recommended prior to beginning nursing courses if the RN student wishes to carry a part-time course load.

The purpose of the first nursing courses is to facilitate transition into professional nursing. Special emphasis is placed on socialization into this role and the expectations of the role. All RN students are required to enroll in the following nursing courses:

NSG 361 *Health Assessment*
NSG 340 *Professional Role Transition*
NSG 343 *Seminar 7 Professional Role Development*
NSG 369 *Writing in Nursing*
NSG 476 *Introduction to Research*
NSG 433 *Seminar 8*

Seminar 8 is taken with or following NSG 425–445. RN students may establish credit by enrollment or challenge examination for:

NSG 421 *System Responses to Physiological Dysfunction*
NSG 441 *Community Response to Health Promotion*
NSG 425 *Nursing Interventions 5*
NSG 445 *Nursing Interventions 6*

An unrestricted West Virginia RN license is required for enrollment in all nursing courses.

R.N.–B.S.N. Suggested Progression

Progression will vary depending on the amount of non-nursing courses that must be completed, whether the student wishes to be part-time or full-time, and when courses are offered. Nursing course requirements for the B.S.N. can be completed in one year of full-time study as follows:

First Year

First Semester	Hrs.
NSG 340 *Prof. Role Transition*	3
NSG 343 *Sem. 7 Prof. Role Dev.*	2
NSG 361 *Health Assessment*	3
NSG 369 *Writing in Nursing*	1
NSG 476 *Intro. to Nursing Rsch.*	3
Total	**12**

Second Semester	Hrs.
*NSG 421 *Syst. Response Phys. Disfunction*	3
*NSG 425 *Nursing Interventions 5*	6
Total	**9**

Summer	Hrs.
*NSG 441 *Community Response to Health Promotion*	3
*NSG 445 *Nursing Interventions 6*	6
Total	**9**

*Based on background and experience, the RN student may establish credit by examination for NSG 421 and 441. For students who have prior experience in the content areas of NSG 425 and 445, a portfolio is used to establish credit by challenge.

School of Pharmacy

George R. Spratto, Ph.D., Dean
Mary Stamatakis, Pharm.D., Assistant Dean for Academic Affairs
W. Clarke Ridgway, B.S., Assistant Dean for Student Affairs
Patrick S. Callery, Ph.D., Assistant Dean for Research and Graduate Programs
www.hsc.wvu.edu/sop

Degree Offered

Entry-Level Doctor of Pharmacy

Nature of Program

Pharmacy was first offered at West Virginia University as a department in the School of Medicine in 1914. It was changed to the College of Pharmacy in 1936 and to the School of Pharmacy in 1958. In 1960, the School of Pharmacy changed from a four-year to a five-year program. The current entry-level doctor of pharmacy program began in Fall 1998, and comprises four years of professional study preceded by a minimum of two years of pre-pharmacy coursework in an accredited college of arts and sciences.

The primary objective of the School of Pharmacy is to educate practitioners for current and future roles in the profession of pharmacy and to educate pharmaceutical scientists for careers in teaching and research.

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education. The council is composed of members from the American Pharmaceutical Association, National Association of Boards of Pharmacy, American Association of Colleges of Pharmacy, and American Council on Education. The School of Pharmacy holds membership in the American Association of Colleges of Pharmacy, whose objective is to promote the interests of pharmaceutical education. All AACP member institutions must maintain certain requirements for entrance and graduation.

Admission

All students seeking enrollment in the School of Pharmacy must comply with regulations appearing in the *WVU Undergraduate Catalog* and the *WVU Health Sciences Center Catalog*.

Students preparing for the study of pharmacy must satisfy the coursework requirements for entrance into the School of Pharmacy entry-level doctor of pharmacy program by completing the following requirements or their equivalents.

Pre-Pharmacy Requirements	Credit Hrs.	WVU Courses
English Composition	6	ENGL 101 and 102
Introduction to Calculus	3 (4)	MATH 150 (or MATH 155)
Principles of Microeconomics	3	ECON 201
General Biology	8	BIOL 115 and 117
General Chemistry	8	CHEM 115 and 116
Organic Chemistry	8	CHEM 233/235 and 234/236
Physics	8	PHYS 101 and 102
Introduction to Statistics	3	STAT 211 (or ECON 225)
General Microbiology	3 (4)	MBIM 200 (or ENVM 241)
General Communications	3	COMM 100 and 102
Electives*	18	
Total	**71-73**	

*Electives must satisfy the University Liberal Studies Program requirements. Cluster A—12 hrs.; Cluster B—six hrs. in addition to ECON 201 *Principles of Microeconomics* and COMM 100 and 102 *General Communications*, and which includes a three-hour course fulfilling the requirement for a foreign culture, minority, or gender-related course within the Cluster A or B electives.

Admissions are competitive. Criteria used to evaluate candidates include academic performance, as measured by the grade point average for all the above-noted pre-requisite courses and the cumulative grade point average achieved in ALL prior college-level coursework, Pharmacy College Admissions Test (PCAT) scores, a personal interview, an on-site composed written essay and recommendations from college faculty. PCAT tests must have been taken within five years of the date of application. All pre-requisite courses must be completed with a grade of C or better. Priority is given to qualified West Virginia residents and applicants who have performed the majority of their pre-requisite coursework in a West Virginia college or university.

All applicants must first file an initial electronic application with the Pharmacy College Application Service (PharmCAS). Instructions for completing the application are found on the PharmCAS web site, www.pharmcas.org. Supplemental applications specific to the West Virginia University School of Pharmacy will then be sent to candidates deemed qualified by the Committee on Admissions. Application deadlines are subject to change; please check the School of Pharmacy web page at www.hsc.wvu.edu/sop or contact the school to verify current deadlines. A $50 application fee must accompany the supplemental application.

Each applicant who is recommended for acceptance must deposit $100 before acceptance is official. If the applicant enrolls, this sum is applied to the first-semester tuition. If the applicant fails to enroll, this deposit is refundable until June 1. Before enrollment in the School of Pharmacy, all students must initiate compliance with immunizations and diagnostic procedures required by the governing board, WVU, the Robert C. Byrd Health Sciences Center, and/or the School of Pharmacy.

Completion of the Pharmacy College Admission Test is a requirement for admission. It is strongly recommended that the student take the test in the fall before making application for admission. Information concerning time and place of the test can be obtained from a pre-pharmacy advisor, the School of Pharmacy, or by writing: The Psychological Corporation, PSE Customer Relations-PCAT, 555 Academic Court, San Antonio, TX 78204-2498.

Interviews are held at the WVU Health Sciences Center in Morgantown and Charleston. Interviews are scheduled during February and March. Only applicants who are deemed by the Committee on Admissions to be competitive for consideration for acceptance will be offered an interview.

Three academic recommendations are required, although more may be submitted. At least two of these recommendations must be provided by course instructors in any two of the pre-pharmacy science areas: biology, chemistry, math, and physics. The third recommendation may be provided by a course instructor of the student's choice.

Admission to Advanced Standing

Students from other accredited schools of pharmacy may be admitted if space is available and they meet the pre-requisite course requirements of the WVU School of Pharmacy, have at least a 2.5 grade point average, and are eligible for continuation toward the degree in pharmacy at the school initially attended. Grades of D in professional courses will not be transferred.

For complete information concerning the curriculum and courses of instruction in the School of Pharmacy, see the *WVU Health Sciences Center Catalog*.

School of Physical Education

Dana D. Brooks, Ed.D., Dean
Lynn Housner, Ph.D., Associate Dean
Harmon Gallant, J.D., Coordinator, Sport Management
Andrew Ostrow, Ph.D., Coordinator, Sport Behavior
Vincent G. Stilger, H.S.D., ATC, Undergraduate Athletic Training Program Director
Andrew Hawkins, Ph.D., Coordinator, Physical Education/Teacher Education
www.wvu.edu/~physed

Degree Offered

Bachelor of Science in Physical Education

Nature of Program

Students in physical education and sport studies examine the relationship of play, games, sport, athletics, fitness, and dance to our culture and cultures throughout the world. Their preparation includes the acquisition of knowledge and skills from a vast array of movement activities in addition to an understanding of associated physiological, biomechanical, sociological, psychological, historical, philosophical, and pedagogical principles. Preparation in athletic training is designed to enable students to prevent and treat injuries related to athletic competition.

Graduates in physical education with teaching and coaching certification are generally employed as elementary or secondary physical education teachers and athletic coaches. Graduates in sport studies are employed with professional and collegiate sport enterprises, fitness centers, recreation programs, sporting goods stores, or commercial sporting goods manufacturers, or pursue graduate training in sport psychology.

Programs

Baccalaureate programs offered in the School of Physical Education include athletic training, athletic coaching education, physical education/teacher education, sport management, and sport behavior (psychology/sociology). Certification is available in athletic coaching and health education.

Facilities

Facilities of the School of Physical Education include the gymnasium, dance studio, and swimming pool in E. Moore Hall; a gymnasium in Stansbury Hall; bowling lanes and game rooms in the Mountainlair; indoor track, sports area, weight training room, martial arts room, and rifle range in the Shell Building; outdoor areas including the stadium, tennis courts, archery range, soccer and field hockey fields, and outdoor track; and the Natatorium with its pool and diving well.

The Coliseum contains the Ray O. Duncan Reading Room, classrooms and seminar rooms, a large gymnasium, a dance studio, racquetball courts, and faculty offices. Additional faculty and staff offices are in E. Moore Hall, Stansbury Hall, the Natatorium, and the Shell Building.

Admission Requirements

The School of Physical Education uses the admission requirements of WVU. In addition, you must have a high school average of 2.0. High school graduates are required to present credit for four units of English, one unit of biology, three units of social studies, two units of college preparatory mathematics, one of which must be algebra, and eight units of electives.

Credit Load Per Semester

The minimum work-load per semester for a full-time student is 12 hours and the maximum work-load per semester is 20 hours. However, an advisor may register a student as a part-time student if fewer than 12 hours are required to meet all requirements for the bachelor's degree. Other exceptions to these regulations may be requested by petitioning the Committee on Academic Standards.

Requirements for Degrees

- All students must complete University LSP required courses and UNIV 101.
- Teacher Certification Curriculum: Students in teacher certification programs must complete a group of educationally related courses and other prescribed work.
- Students must complete the major requirements as determined by the appropriate department.
- Students must complete a minimum of 128 hours.
- A minimum grade point average of 2.0 is required for graduation. Those in teacher certification must have a minimum grade point average of 2.5.

Bachelor of Science in Physical Education

Opportunities are offered for you to pursue certification in teaching or coaching in physical education.

Teacher Certification Program in Physical Education

The required courses in physical education for teacher certification are:
Completion of University LSP and University 101.
Probation: PET 124, 125, 167, 175, 206, 276
Professional - PET 228,233,349,350,359,361,370,451,477,483,485,487,488,489
Activities - PET 324, 339, 340, 341, 342, 344, 351, 353, 354, 356, 358, 448, 452, 453, 460
Required Cluster C courses: BIOL 101,103, CS 101, HN&F 171.
Required Cluster B courses: PSYC 101 and 241
Health Certification Community Health Promotion: CHPR 170,172, 271, 250, 301, 302, 304, 320, 493Z.
Nutrition: HN&F 171
Physiology: EXPH 365 or BIOL 235
Psychology: PSYC 241

In addition, the student will complete professional education requirements as listed by the College of Human Resources and Education

Recommendation for Teacher Certification

Prospective teachers who intend to apply for teacher certification in West Virginia must satisfy the requirements in physical education and professional education. Teacher certification in physical education is provided for grades K-12. Community health promotion certifies students to teach grades 5-12.

Certification in Athletic Coaching

The required courses for a WVU athletic coaching certification are ATTR 121; ACE 256, ACE 103, 357-367, 493A (choose one or more); SS 271 or 272; and EXPH 364 and 365. This certification program is not part of the subject matter specializations approved by the West Virginia Board of Education.

Athletic Coaching Education Emphasis

Required Courses
Completion of University LSP
Required Cluster B: PSYC 101, 241, SS 272 or 373
Required Cluster C: HN&F 171

Departmental Requirements: ACE 100,106, PET 175 or CDFS 110, ACE 256, ACE 103, 357-367, 493A (choose any 3), ATTR 121, CHPR 172 or First Aid and CPR Certification, SS 426, SS 271, 272, EXPH 364 or PET 125, EXPH 365.
Sport Skills: PE 165 *Conditioning* and PE 164 *Weight Training*; select four hours from the following activities: PE 101, 104, 130, 134, 157, 158, 159, 160, 161, 162,170,173,174,182.
Practicum: ACE 491 (12 hrs.) and 494.

Sport Studies

The sport studies program offers opportunities for students to pursue program majors in sport behavior and sport management. The programs in sport studies are not teacher certification programs.

Required courses for sport management are:
Completion of University LSP and University 101
Required Cluster B: COMM 100, 102 *or* 104
Requirements below are for Sport Behavior Management
Applied Area Requirements: SS 167, 271, 272, 370, 380, 425, 426, 485, 486, 487, 493 (Practicum).
Foundation Requirements: ACCT 201; ECON 201; CS 101; COMM 306; BUSA 320, 330; JRL 101; PR 215; six hours of approved electives.

Required courses for sport behavior are:
Completion of University LSP and University 101
Required Cluster B: PSYC 101, 241; SOCA 101
Applied Area Requirements: SS 167, 210, 271, 272, 373, 374, 385, 426, 493 (*Sport Psychology Seminar*), PET 175, ATTR 121, EXPH 364, 365, ACE 256, COUN 303.
Foundation Requirements: PSYC 101, 241, 251, 301; one three-hour psychology elective—200-300 level; SOCA 101,107, 235, 360; one three-hour sociology elective—200-300 level.

Note: All students enrolled in sport management and sport behavior programs must earn a grade of C or better in applied and foundation requirements.

Physical Education Basic Instruction

Physical education classes are open to all students of the University. A wide variety of sport, aquatic, dance, gymnastic, fitness, martial arts, outdoor adventure, and lifetime sport activities are offered. The aims of the physical education basic instruction program are to develop:

- An appreciation of the body and its capacity to move.
- Movement skills of games, sport, dance, and aquatics.
- An appreciation of the value of continued activity throughout all age periods in an individual's life.
- An understanding of the cultural significance of sport and dance.
- Concepts of the physiological characteristics of sport and movement.

All courses numbered PE 101-293 are at a beginner's level unless otherwise specified. Repeating an activity is not allowed except at a more advanced level.

Athletic Training

Application Requirements An individual desiring to become a curriculum athletic training student (CST) must first spend time in the prospective athletic training student (PST) program. In order to gain a basic working knowledge of the athletic training profession, the student must work in the athletic training rooms to see if this is the route that is desired. Before applying to the program, the student must fulfill certain requirements that include:

1. The student must have participated in the PST program.
2. A cumulative GPA of 2.75 or better.

3. Two reference evaluation forms must be submitted.
4. Transcripts must be submitted.
5. An application to the program must be submitted.
6. Students will attend weekly in-services in the PST program and must complete a minimum of 75 observational hours in the WVU athletic training rooms under the direct supervision of a certified athletic trainer.
7. Currently enrolled in or successful completion of all prerequisite courses prior to making application to the program (BIOL 101 and 103, BIOL 102 and 104; ATTR 121, 122; ENGL 101).
8. Students must have a C grade or better in BIOL 101 and 103, BIOL 102 and 104; ENGL 101; and a grade of a B or better in ATTR 121 and 122 to be considered as a viable candidate.

After all of the requirements have been met, the student will be interviewed in the presence of all full-time faculty/staff athletic trainers and graduate assistants. Selections for admission into the program are based on interviews and other criteria. These criteria include academic performance, reference evaluation forms, outside experiences, WVU experiences, and a written case study. Students are eligible to apply to the athletic training program during the spring semester of their first year at WVU. Up to 15 students are accepted annually into the athletic training program. Technical standards have been established by the WVU Athletic Training Education Program. These standards are the essential qualities considered necessary for students admitted to this program to achieve the knowledge, skills, and competencies of an entry-level athletic trainer, as well as meet the expectations of the program's accrediting agency (Commission on Accreditation of Allied Health Education Programs [CAAHEP]). In the even a student is unable to fulfill these technical standards, with or without reasonable accommodation, the student will not be admitted into the program. Please visit our athletic training website to view these standards: www.wvu.edu/~physed/attrain/wvattr-1.htm.

Once accepted into the athletic training program, the student will have three years to complete both the clinical and didactic portion of the program. The clinical component of the athletic training program requires that all students demonstrate mastery of the National Athletic Trainers' Association (NATA) Athletic Training Educational Competencies and Proficiencies. The didactic portion consists of the following classes:

Athletic Training: ATTR 121,122, 218, 219, 220, 221, 222, 281, 282, 301, 302, 321, 323, 325, 327, 332, 403, 404, 424, 426
Exercise Physiology: EXPH 365, 368
Community Health: CHPR 170,172
Biology: BIOL 101,102,103,104
Sport Studies: SS 383
Chemistry: CHEM 115
Psychology: PSYC 101
Human Nutrition and Foods: HN&F 171
Physics: PHYS 101
Pharmacy: PHAR 449
Pathology: PATH 301
Statistics: STAT 211 or ECON 225
Biology: BIOL 235

Upon graduating from the athletic training major, students are eligible to take the National Athletic Trainers' Association Board of Certification (NATABOC) examination. The successful completion of the NATABOC examination provides job opportunities at the high school, college, professional, clinical, or corporate levels. In addition, students upon graduation may pursue additional education by obtaining a master's degree in athletic training or a related field of study.

Special Programs

Robert C. Byrd Health Sciences Center Center on Aging Education Unit

Richard Ham, MD, Director

The United States, and countries around the globe are experiencing an unprecedented increase in their population of older adults. This dramatic change is affecting all aspects of our society, and its impact will grow. An education in gerontology—the study of human aging—will enhance the professional qualifications and employability of students preparing for a variety of careers including business management, health sciences, counseling/psychology, human services, therapeutic recreation, and urban and regional planning. The study of gerontology also prepares students to prepare for and to deal with aging in their families, friends, and themselves. The Center on Aging offers an 18-credit undergraduate certificate program for students who wish to obtain a foundation of knowledge in aging while pursuing a degree in another field.

Requirements for the certificate include MDS 212 *Introduction to Gerontology* (3 hrs.), MDS 312 *Issues in Gerontology* (3 hrs.), GERO 491 *Professional Gerontology Field Experience* (3 hrs.), GERO 412 *Public Policy of Aging* (3 hrs.) and additional elective courses (6 hrs.) from an approved pool of aging-related courses offered in a number of disciplines.

The Center on Aging is committed to providing research, education, and service aimed at improving the health, well-being, and security of older people and those who care for them, in West Virginia and throughout the nation. Collaborative approaches to improving healthcare services for the elderly are emphasized. The center offers clinical services to patients through the Center on Aging Medical Practice, and educational services to healthcare professionals through the Mountain State Geriatric Education Center.

A Graduate Certificate of Gerontology, as well as a Practitioner Certificate of Gerontology for persons who are currently working with the elderly is also offered through the Center on Aging. Further information, assistance in academic program planning in multidisciplinary gerontology, and registration forms may be obtained by contacting: WVU Center on Aging, P.O. Box 9127, Morgantown, WV 26506-9127; telephone (304) 293-2265.

Dual Degrees in Business and Foreign Languages

The coordinated dual-degree programs in business and foreign language provide global career opportunities for students seeking the B.S. in business administration and the B.A. with a major in foreign languages.

The B.S. degree in business administration is available in the following majors: accounting, business management, finance, and marketing.

The B.A. with a major in foreign languages is available in the following majors: French, German, Russian, and Spanish.

The program of study for the bachelor of science in business administration (B.S.B.Ad.) and the bachelor of arts in foreign language (B.A.) will vary according to the student's particular major and option. Students normally can graduate with the required 158 credit hours within five years if they plan the program at the beginning of their freshman year. Note that the internship, if available, will be undertaken no earlier than the end of the fourth year of undergraduate study. Students not taking the internship must substitute appropriate coursework approved by the advisor.

Admission Requirements

Students with fewer than 58 hours, in addition to University admission requirements, must meet the following criteria if they plan to qualify for the two degrees:

- A minimum of two college semesters (or two years high school) of one foreign language.
- A minimum of three years of high school mathematics, including two years of algebra or the equivalent; students must qualify for MATH 124 or 126 at WVU.

Formal admission to the dual-degree program requires junior standing or higher and the following prerequisites:

- Completion of 58 credit hours.
- Completion of the intermediate course sequence in a foreign language.
- Attainment of a minimum cumulative grade point average of 3.0.
- Completion of the following courses with a grade of C or better: six hours of principles of economics, six hours of principles of accounting, three hours of college algebra, three hours of college calculus, three hours of statistics, six hours of advanced foreign language (103/104 or 109/110), and six hours of composition and rhetoric.
- Filing a formal application for admission to the program with the undergraduate advising center in the College of Business and Economics.

Note 1: The foregoing are minimum requirements. All students meeting the specific requirements are not guaranteed admission. Limitations on entry may be necessary depending upon the availability of faculty, space, and other resources.
Note 2: The exact requirements of the B.S.B.Ad. degree are those in effect when the student is formally admitted to the College of Business and Economics in the junior year.

Program Overview

Non-Business and Economics Courses	**Hrs.**
ENGL 101 and 102 *Composition and Rhetoric*	6
ENGL 202 *Business English*	3
MATH 124 *Finite Mathematics* or MATH 129 *Pre-calculus**	3-4
Liberal Studies Program (LSP) Cluster A	
Foreign language 203	3
Foreign language 204	3
Other electives (2 disciplines, non-foreign language)	6
LSP Cluster B	
PSYC 101 *Introduction to Psychology*	3
SOCA 101 *Introduction to Sociology*	3
ECON 201 and 202 *Principles* (B/FL students only)	6
LSP Cluster C	
MATH 150 or MATH 155 *Introduction to Calculus**	3-4
ECON 225 *Statistics*	3
CS 101 *Introduction to Computer Applications*	4
Lab science course	4
Subtotal	**50-52**

Required Business and Economics Core Courses (Identical for all majors, see pg. 66.)	
College core less ECON 201, 202, and 225 above	**27**
Required Business and Economics Major Courses and unrestricted electives (varies by major)	**30**
Required Arts and Sciences Courses	
Fine Arts Requirement (see Arts and Sciences section)	3
International Studies Requirement (see Arts and Sciences section)	3
Subtotal	**6**

Foreign Language Requirements	
Linguistics 111 *Introduction to Structural Linguistics*	3
Foreign language 301 advanced	3
Foreign language 302 advanced	3
Foreign language 303 advanced	3
Foreign language 304 advanced	3
Foreign language 331 or above literature course	3
Foreign language approved business/culture courses	9
Subtotal	**27**

Internship (or substitute 16-18 hours of approved coursework)

ACCT, FIN, MANG, MKTG 299 *Internship*	3
ACCT, FIN, MANG, MKTG 495 *Independent Study*	3
A specific foreign language 491 or 493	6
A specific foreign language 494 proseminar	6
Subtotal	**16-18**
Minimum total hours for degrees	**158**

*Although the College of Business and Economics requires MATH 124 and 128, students are encouraged to substitute MATH 155 and 156 or MATH 129 and 155 for MATH 124 and 150 in preparation for graduate admission examinations and higher-level business and economics courses.

Note: The specific upper-division business courses are determined when the student is admitted to the College of Business and Economics at the beginning of his or her junior year.

Internships

By the end of the fourth year of study, students may be selected for special business/foreign language internships available on a competitive basis. Internships may take the form of work with foreign or U.S.-based companies abroad, foreign-based businesses operating in the U.S., or may allow the student to work with regional U.S. firms having dealings with foreign businesses or governments. Students not selected for internships may substitute 16-18 hours of approved WVU coursework.

Coordination

The College of Business and Economics and the Department of Foreign Languages within the Eberly College of Arts and Sciences cooperate closely to facilitate the student's program at all levels. Students will be assigned a special registration code which will allow them to pre-register for classes normally available only to students in business or only to those majoring in foreign languages. Also, special business/foreign language internships will be available only to students accepted into the program.

Early Completion of Prerequisites

Mathematics: In order to meet all mathematics requirements in a timely fashion, freshmen who are pursuing the degrees are encouraged to take the math placement test early to determine if remedial study is necessary. The pre-college algebra workshop is available during both sessions of summer school. Students who need the workshop are encouraged to complete it prior to fall enrollment. Interested students should contact the Department of Mathematics in May of their senior year of high school.

Foreign language: Freshmen who have not yet completed two college semesters (or two years in high school) of one foreign language should be aware they may complete their foreign language prerequisites in the summer sessions before the start of the fall semester. French, German, and Spanish 100 and 200 may be taken in summer sessions I and II. Credit is also available for semesters three and four through departmentally sponsored programs in France, Austria, Mexico, and Spain.

How to Apply for Admission

If entering from high school or transferring with fewer than 58 credits:

- Students should file a University admissions application with the WVU Office of Admissions and Records and stipulate pre-major code 1418.
- Upon admission to the University, students will be assigned an advisor in the Eberly Arts and Sciences Office of Undergraduate Advising and Student Records until they are formally admitted into the program.

Students with at least 58 hours who meet all requirements listed under formal admission requirements section may apply for formal admission to the dual-degree program, filing a formal application through the Eberly College of Arts and Sciences advising office. Upon admission, students will be assigned an advisor.

Contacts

If you have questions about the coordinated dual degrees in business and foreign languages, contact: Assistant Dean, College of Business and Economics, West Virginia University, Morgantown, WV 26506; telephone (304) 293-4959. Or contact: Associate Dean, Eberly College of Arts and Sciences, 121 Student Services Center, West Virginia University, Morgantown, WV 26506; telephone (304) 293-7476.

Multidisciplinary Studies Courses

Multidisciplinary Studies (MDS) courses analyze significant issues, problems, or themes by applying two or more disciplines to them; explore the theoretical and methodological relationship of two or more disciplines to each other; and involve a combination of disciplines so as to preclude their being classified realistically as one of humanities, social sciences, or physical sciences.

Responsibility for approving MDS courses rests with the Liberal Studies Program Committee and the Faculty Senate. Each course has its own staff, drawn from the faculties of the colleges and schools of the University. MDS courses may be credited to University LSP, as indicated. Only one multidisciplinary studies course may be counted toward fulfilling Liberal Studies Program requirements in each cluster area.

Multidisciplinary Studies Degree Program

Nicholas G. Evans, Coordinator

Degree Offered

Bachelor of Arts
Major: Multidisciplinary Studies

The Multidisciplinary Studies B.A. Degree Program comprises three related concentrations rather than one major. The program's flexibility and concern with contemporary issues, along with the provision for breadth with depth in appropriately chosen areas of study constitute its most salient features. This program does not limit students to courses of study in a particular college or school, but emphasizes multidisciplinary/cross-disciplinary studies with some special focuses. Each student majors in a "theme area" comprising three "concentrations."

For example, one established theme area is called "health, wellness, and society" and consists of groups of courses in sport studies, environmental biology, and economics. Additional information about other theme areas and concentrations is available at the Undergraduate Academic Services Center (104 Student Services Center).

Curriculum

The MDS baccalaureate program requirements include the following:

- Completion of Liberal Studies Program (cluster) requirements (45 hrs.).
- Completion of three concentrations in which none of the courses have been used to satisfy general education requirements (i.e., the Liberal Studies Program); the concentrations selected must constitute a pre-approved theme area or be approved by the MDS Oversight Committee.
- Completion of at least 60 hours of upper-division coursework.
- Completion of a capstone (or project) course.
- Achievement of a cumulative grade point average of at least 2.0.
- Completion of at least 128 semester hours.

Admission

Admission to the program is possible after completion of at least 30 semester hours and a cumulative grade point average of at least 2.0. Admission must occur before a student begins the last 45 hours prior to graduation from the program. All students in professional programs (such as teacher education or occupational therapy) must seek admission through the appropriate professional program. Admission and completion of

the degree program are the result of an academic program plan articulated by the student with assistance from the academic advisor. The plan must be approved prior to identification and definition of the student's theme area and concentrations. Admission standards are established by individual theme areas. In those cases where a student wishes to define a theme area (or group of concentrations), the student must submit a statement of how the proposed theme area coincides with the student's plans for the future.

Oak Ridge Associated Universities

West Virginia University is a member of Oak Ridge Associated Universities (ORAU), a nonprofit, education and research management corporation of 49 colleges and universities. ORAU, established in 1946, conducts programs of research, education, information, and human resource development for a variety of government and private organizations. It is particularly interested in three areas: energy, health, and the environment.

Among ORAU's activities are competitive programs to bring undergraduate and graduate students and faculty members to work on research problems at the research facilities of the Department of Energy (DOE) and other federal agencies. Participants are selected by ORAU and the staffs of the facilities participating in the ORAU programs, which are: Oak Ridge National Laboratory; the Oak Ridge Y-12 Plant; the Oak Ridge Gaseous Diffusion Plant; the Atmospheric Turbulence and Diffusion Division in Oak Ridge; the Savannah River Laboratory in Aiken, S.C.; the Pittsburgh Research Center of the U.S. Bureau of Mines; the National Center for Toxicological Research in Jefferson, Ark.; the Puerto Rico Nuclear Research Center; and the U.S. DOE Energy Technology Research Centers in Pittsburgh, Pa., and Morgantown. The ORAU Institute for Energy Analysis, the Professional Training Program, the Medical and Health Sciences Division, and its other programs are also open to qualified students and faculty members.

Professional Internship Program

Program appointment periods that alternate with terms of full-time academic study at the students' home institutions afford students opportunities to apply the theories and methods learned in the classroom in a research environment under the guidance of a research advisor.

Graduate Internship Program

Internships at federal laboratories relate to the student's major and career goals, provide opportunities to apply theories and methods learned in the classroom, and introduce research areas for consideration as possible thesis or dissertation topics.

Post-Graduate Research Program

Research appointments are available for recent master's and doctoral degree recipients. Up to two years of support for collaborative research at federal laboratories is provided.

Faculty

Faculty members of WVU, under the ORAU Faculty Research Participation Program, can go to a Department of Energy facility for varying periods up to three months for advanced study and research. It is also possible to combine a sabbatical with a longer appointment. Part-time appointments during the academic year are also available at certain laboratories.

Stipends

Student stipends are at fixed rates that change from time to time. Faculty stipends are individually negotiated, based upon the current University salary.

Contacts

For more information contact ORAU Council Member, WVU NRCCE, at (304) 293-2867; or ORAU Corporate Secretary at (615) 576-3306; on-line at www.orau.gov/.

ROTC

Air Force Aerospace Studies
Military Science

WVU offers qualified applicants two- and four-year courses of instruction in Military Science (Army ROTC), and Air Force Aerospace Studies (Air Force ROTC). Normally, successful completion of one of these courses and University degree requirements leads to a commission as a second lieutenant in the U.S. Army or the U.S. Air Force.

Equivalent credit for part or all of the four basic semesters of ROTC may be granted in accordance with existing military service regulations. This credit will be awarded on the basis of prior active military service, high school ROTC, military school (Army ROTC at high school level), attendance at service academies, junior college senior division Army ROTC, or Civil Air Patrol training.

Liberal Studies Program

The dean of a college or school awarding a degree will determine if ROTC courses will be counted as free electives or will be counted toward fulfillment of Liberal Studies Program requirements. Up to three credit hours of ROTC may count toward fulfillment of the LSP requirement in any cluster area.

Uniform Wear and Deposits

Uniforms are not required for students enrolled in the Army ROTC basic course, but are required for the advanced course. All Air Force ROTC students are required to wear a uniform to ROTC classes and leadership laboratories.

Each Air Force ROTC student is required to pay a uniform deposit of $50, which will be forfeited as initial payment toward the reimbursement of the total cost of loss or damage to issued property in the student's possession. The deposit is paid to the WVU controller at the time of registration and is refunded upon the return of undamaged and freshly cleaned uniforms. Both Army and Air Force ROTC cadets may purchase their Class A uniforms upon successful completion of the ROTC program.

U.S. Air Force ROTC
WVU Division of Aerospace Studies

Nature of Program

The U.S. Air Force officer education program at WVU has been in existence since 1948 and is designed to provide training that will develop leadership, managerial, and interpersonal skills vital to the professional air force officer. Its purpose is designed to qualify you for commissioning in the U.S. Air Force. WVU has the only U.S. Air Force ROTC (AFROTC) detachment in West Virginia. General military courses (GMC) are open to all WVU students. Professional officer courses (POC) are open to students who complete the GMC (two-year program) and are selected to attend and successfully complete a four-week field training encampment. Two-year AFROTC applicants may be accepted into a two-year condensed program and must attend and successfully complete a five-week field training encampment.

Scholarship Program

Outstanding students from any academic discipline may compete for scholarships under this program. A large number of scholarships are available for students majoring in the engineering, scientific, mathematical, or nursing fields. If you win a scholarship, AFROTC will pay for tuition, fees, and required textbooks, as well as provide a tax-free monthly allowance between $250 and $400 based on academic year. Scholarships are available for two, three, and four years, depending on funding. Air Force ROTC also offers a $3,000 annual incentive scholarship, regardless of the student's major. To qualify, the student must be a full-time student enrolled in the professional officer course, and earn a 2.00 term GPA.

Benefits

Enrolling in Air Force Reserve Officer Training Corps (AFROTC) provides the opportunity to:

- Earn academic elective credit which can be applied toward the requirements for any undergraduate major at WVU.
- Compete for AFROTC scholarships that pay full tuition, fees, and required textbooks, and provide (tax free) monthly stipend; beteen $250 and $400 based on academic year.
- Receive free career counseling from full-time campus representatives.
- Go on field trips to air force installations in the United States.
- Try AFROTC during freshman and sophomore years without obligation (unless you receive an AFROTC scholarship).
- Develop leadership and managerial skills in the various corps projects.
- Compete for entry into the Professional Officer Course (POC) and earn an U.S. Air Force commission.
- Travel, on a space available basis, aboard government aircraft.

Distinguished AFROTC Graduate

An aerospace studies professor may designate as a distinguished graduate a POC member who:

- Demonstrates superior academic and field training performance.
- Possesses outstanding qualities of leadership and high moral character.
- Demonstrates clearly exceptional leadership in recognized campus activities.

U.S. Air Force Academy

The president of WVU may annually nominate five outstanding AFROTC students to the U.S. Air Force Academy. Applicants are recommended by the professor of aerospace studies to the WVU president during January of each year.

Veterans Program

Veterans may receive college credit for the first two years of Air Force ROTC if competing for entry into the POC. If you are interested, contact the professor of aerospace studies early in your sophomore year.

Curriculum

The curriculum in U.S. Air Force aerospace studies is divided into three distinct areas: general military course, leadership laboratory, and professional officer course. In addition, each cadet must take and successfully complete a course in English composition, (satisfied by English 101 and 102), or its equivalent, before completing the general military course. Also, prior to graduation and commissioning, all cadets must complete a course in mathematical reasoning.

Leadership Laboratory

Leadership laboratory takes an average of two hours per week throughout the student's enrollment in AFROTC. Instruction is conducted in an organized cadet corps with a progression of experiences designed to develop each student's leadership potential. Leadership laboratory involves a study of air force customs and courtesies, drill and ceremonies, physical fitness, career opportunities, and the life and work of an U.S. Air Force junior officer. Students develop leadership potential in a practical, supervised training laboratory, which typically includes field trips to U.S. Air Force installations.

General Military Course (GMC)

The U.S. Air Force course of study offered during the freshman and sophomore years is the general military course (GMC). This is composed of one class hour and two leadership laboratory hours per week. Two credit hours are allowed for each semester course successfully completed. Four semesters of the GMC is one method of competing for admission to the POC. However, a two-year POC option is available if you do not complete the GMC.

To qualify for the general military course, you must:

- Be a full-time student.
- Be a United States citizen (to receive a scholarship).
- Be in good physical condition.
- Have good moral character.
- Be at least 14 years old (17 to receive a scholarship appointment).

Professional Officer Course (POC)

The Professional Officer Course (POC) corresponds to the junior and senior years of your academic program. Graduate students may also enroll in the advanced course if they have four semesters of school remaining.

The POC is designed to provide highly qualified junior officers for the U.S. Air Force. Admission is based on such factors as leadership, scholarship, physical qualifications, and academic major. Successful completion of the advanced course qualifies you for appointment as a second lieutenant in the U.S. Air Force upon college graduation.

Instruction averages three hours per week throughout the four semesters, plus leadership laboratory. Three hours of credit are allowed for each of the four semesters of work in the advanced program subsequent to acceptance by a school or college in the University.

To qualify for the professional officer course, you must meet all the qualifications for the general military course and:

- Have two academic years remaining (undergraduate, graduate, or a combination of both).
- Be a United States citizen.
- Be 18 years old, or 17 with a parent or legal guardian's consent.
- Be physically qualified.
- Pass the Air Force Officer Qualifying Test.
- Be interviewed and selected by a board of U.S. Air Force officers.
- Complete a four-week field training course if you're in the four-year program or a five-week field training course if you're in the two-year program.
- Complete all graduation and commissioning requirements as follows:
  Pilot or navigator candidates before age 26 1/2.
  Scholarship recipients before age 27 as of June 30 of the year you plan to be commissioned.
  Non-flying, non-scholarship students before age 30, unless prior service age 35.

U.S. Army ROTC
WVU Division of Military Science

Nature of the Program

The curriculum includes skills expected of an army officer including how to motivate co-workers, cope with unexpected challenges, organize large, complex tasks, and an introduction to the army's values-based leadership techniques. Additionally, students learn skills in demand today in the civilian and business worlds such as teamwork, tact, and effective communications. There are two- and four-year ROTC programs. The traditional four-year program is composed of the basic course and the advanced course.

The Basic Course

The first two years compose the basic course. This includes MILS 101,102, 201, and 202 and includes classroom studies in such subjects as military history, leadership development, and national defense. Students can enroll in the program for the first two years without incurring any future military obligation. After successful completion of the basic course, students can apply for admission into the advanced course.

The Advanced Course

After successful completion of the basic course, students wishing to actively seek a commission as an officer in the U.S. Army must enter into the advanced course. It is required of all students who have received an ROTC scholarship. Classes required are MILS 301, 302, 401, and 402, a weekly leadership lab, and military history 195. During this part of the program, students will put their management skills to the test while continuing to hone the traits required for commissioning into the U.S. Army. As a cadet in the advanced course, you will spend six weeks of the summer between your junior and senior years attending advanced camp at Fort Lewis, Washington. In camp, students receive intensive training in tactics, physical fitness, land navigation, obstacle course, and rappelling. They also have the opportunity to lead other cadets through challenging missions.

While in either program, ROTC textbooks, uniforms, and essential materials are furnished at no cost. Additionally, advanced course and scholarship students receive a stipend allowance of $250 a month during the school year.

The Two-Year Program (Sophomores, Junior College Transfers, and Partnership Schools)

If students miss the first two years of Army ROTC, the two-year program offers the opportunity to achieve the same goals and benefits as the four-year program but at an accelerated pace. This is designed for sophomores who failed to take the basic course, students transferring after attending a junior college or another institution, or for students attending one of our partnership schools. In this program, students first attend ROTC Basic Camp Challenge at Fort Knox, Kentucky, in the summer between their sophomore and junior years. This is a fully paid (over $700 plus room, board, and transportation), six-week training camp where students may compete for two-year scholarships. Students must have a minimum of 53 hours of college credit with a 2.0 GPA (2.5 to compete for a scholarship).

Additionally, if a student is currently in the national guard, army reserve, a veteran from any service, or has high school JROTC experience of three years or more, he or she may qualify for entry into the advanced course under the two-year program. Students must have a minimum of 53 hours of college credit with a 2.0 (or better) GPA.

Simultaneous Membership Program (SMP)

Students currently in the army national guard or U.S. Army Reserve can participate in the advanced course as an SMP cadet. Benefits of the SMP include immediate promotion to sergeant (E5) for pay purposes in their current unit, receipt of any Montgomery G.I. Bill kicker, $250 a month stipend, and any tuition assistance offered by the service. Currently the West Virginia National Guard pays 100 percent of in-state or out-of-state tuition for both undergraduate or graduate studies. The army reserve offers loan repayment and 75 percent tuition assistance.

Information on these programs may be obtained through the professor of military science at (304) 293-2911 ext. 135. For a detailed overview of Army ROTC, students can call 1-800-USA-ROTC or view on-line at www.armyrotc.com.

Judge Advocate General (JAG) Programs

The JAG Corps is the oldest "law firm" in the U.S., dating back to 1775. There are approximately 1,500 active duty (full-time) attorneys and 2,600 reserve and national guard (part-time) attorneys. Students in the advanced course should take the LSAT prior to the fall of their senior year. They must then request an educational delay and branch JAG. If accepted to the law school of the student's choice, the educational delay may be granted. While in law school, students may apply for one of 100 summer internships offered by the JAG Corps.

Graduate Medical Programs

The army offers a variety of graduate programs to ROTC graduates. These include specialties in nursing, dentistry, medicine, psychology, optometry, and veterinary medicine. Interested students must apply for educational delay following graduation and commissioning.

ROTC Scholarship Program

Merit-based scholarships are available for two, two-and-a-half, three, three-and-a-half, and four years and are available for both graduate and undergraduate programs. These scholarships pay all tuition and fees up to $17,000 a year. They also provide $510 a year for books and include a $250 per month stipend. Four-year scholarships are normally reserved for high school students. The application process starts by applying online at www.armyrotc.com or by calling 1-800-USA-ROTC to receive an application by mail. The remaining scholarships are considered "campus-based" scholarships given at the discretion of the professor of military science. Students must meet the following requirements for an Army ROTC scholarship:

1. Be a citizen of the United States.
2. Be between 17 years old at the time of acceptance.
3. Be no older than 25 when commissioned (a four-year extension may be granted for prior service.)
4. Be of good moral character.
5. Exhibit a strong desire to become an army officer.
6. Possess leadership potential to become an effective leader. These include appearance, personality, academic excellence, extracurricular activities, and physical fitness.
7. Be medically qualified by passing a Department of Defense Medical Evaluation Board physical.
8. Must be eligible for a "secret" security clearance.

Studying the Environment at West Virginia University

Environmental issues occupy a high priority with the people of the world. Clean air, clean water, solid waste management, endangered species, land use policy, and toxic substance control are just some of the environmental issues that are of concern to people across the globe.

That's why West Virginia University offers programs in a wide variety of disciplines that focus on the environment: to learn how to make best use of our natural resources while protecting our fragile ecosystem for future generations.

Agricultural and Environmental Education

This program in the Davis College of Agriculture, Forestry, and Consumer Sciences emphasizes communication and leadership skills. Training in natural resource management is increasingly important as land in agricultural use now provides the majority of open spaces in industrialized countries. Areas of emphasis include leadership, communication, agricultural and environmental technology, extension education, and teacher certification. The program prepares students for careers in private and public employment.

Chemical Engineering

Students in this program of the College of Engineering and Mineral Resources learn to identify, analyze, and reduce health, safety, and environmental risks in chemical processes. They design projects which involve inherently safe design, pollution prevention, and life-cycle analysis techniques. Elective courses in health, safety, and environment are offered, and students have worked on senior thesis projects in collaboration with the National Institute for Occupational Safety and Health (NIOSH), the United States Department of Energy, and other agencies. Graduates have obtained employment in government and industry in environmental engineering.

Civil and Environmental Engineering

This program of the College of Engineering and Mineral Resources offers a series of environmental engineering courses as electives for students who are interested in specializing in environmental engineering. Students who select and finish a sequence of technical electives during the junior and senior years will be granted a degree with emphasis on environmental engineering. Students with the specialty in environmental

engineering have comprehensive knowledge of air and water qualities and characteristics of pollutants in physical, chemical, and biological aspects. They are equipped with both fundamental theories and updated technologies.

Environmental Biology

An area of emphasis within the biology degree, this program of the Eberly College of Arts and Sciences firmly grounds students in the fundamentals of biology. Advanced-level courses in ecological and organismal biology give the student a rigorous background in modern biological studies of the environment, from the molecular to the global level. Students with this background are prepared for employment in all levels of government and private industry as well as for advanced study in master's and doctoral programs.

Environmental Chemistry

This course of study in the Eberly College of Arts and Sciences offers interdisciplinary training in chemical, biological, and engineering sciences. Because graduates have the background necessitated by the chemistry degree program, they are ideally suited to study the nature, reactions, transport, and fates of chemical species in the environment (air, water, and soil) and are employed by municipal, state, and federal agencies as well as environmental consulting firms. Graduates are also prepared to continue their studies in graduate programs in the environmental and health sciences.

Environmental Geoscience

The program housed in the Department of Geology and Geography of the Eberly College of Arts and Sciences prepares students for careers involving environmental issues that affect our present and future quality of life. The broad nature of the curriculum reflects the diversity of environmental problems and the increased demands placed on modern environmental scientists to recognize and understand the sources and impacts of environmental pollution. The curriculum educates geoscientists to identify and remediate environmental problems, to compile and analyze environmental data, to understand the regulatory aspects of environmental protection, and to communicate both with the wide range of professional disciplines for whom the environment is of special concern and with the public in general.

Environmental and Natural Resources Economics

Offered by the Davis College of Agriculture, Forestry, and Consumer Sciences, this is an applied economics program. The focus of the program is on environmental and natural resource economics and policy. The major prepares students for careers at all levels of government and in private industry. A special feature of the program is the opportunity to explore the interdisciplinary nature of environmental programs and linkages between natural resources and economic development issues.

Environmental Protection

This interdisciplinary program of the Davis College of Agriculture, Forestry, and Consumer Sciences includes broad interdisciplinary training in the basic and environmental sciences concentrating on two areas of specialization: plant protection or soil and water protection. The program prepares students for careers which safeguard and quality of the environment. Graduates are employed by municipal, state, and federal government agencies, environmental consulting firms specializing in land reclamation and water quality, and companies associated with the gas, oil, and coal industries.

Environmental Studies

A track in the political science program of the Eberly College of Arts and Sciences, environmental studies offers a specialized curriculum blending coursework in political science, the policy sciences, and the natural sciences. Students entering this field may work in either the public or private sector as policy analysts, lobbyists, natural resource managers, or public affairs specialists. Students might also consider this track as a first step towards more advanced training after the bachelor's degree.

Forest Resources Management

This program in the Davis College of Agriculture, Forestry, and Consumer Sciences deals with the management of the forest to produce goods and services obtained from the land and trees. The program prepares students for careers with forest industries, the government, and others concerned with the value of forest ecosystems. The program is accredited by the Society of American Foresters.

Recreation, Parks, and Tourism Resources

This program in the Davis College of Agriculture, Forestry, and Consumer Sciences prepares students for increasing responsibilities in public agencies (park service, forest service, state park systems, etc.) and in the commercial sector (tourist attractions). The natural resources recreation option focuses on outdoor recreation, and the leisure services delivery option prepares students for general entry into the parks and recreation career field. The program is accredited by the National Recreation and Park Association.

Wildlife and Fisheries Management

This program in the Davis College of Agriculture, Forestry, and Consumer Sciences prepares students for many careers, such as wildlife and fish biology, wildlife and fish management, consulting, and planning of wildlife and fisheries programs. Available options focus on communications, fisheries science, planning, wildlife management, and wildlife sciences.

University Honors Program

The University Honors Program provides cohesive, integrated honors courses which apply toward the satisfaction of general education and LSP requirements and some requirements for the major.

Admission to the program is by application and is based on ACT or SAT composite standard scores and high school grade point averages or status as a National Merit Semi-Finalist. Admission to the program by enrolled college students is based on grade point average on the first 14 to 34 credit hours of college coursework.

Class sizes are small, affording students an opportunity to participate in individualized, concentrated instruction. A student accepted into the program is expected to enroll in one honors course each semester as a full-time student at WVU (enrolled for at least 12 hours per semester), maintaining a grade point average in accordance with the standards established by the University Honors Program. In addition to fulfilling the program's requirements, honors students fulfill all requirements of the University and major area of concentration. Students enrolled in the Honors Program do not take more courses than other students; such students use the honors courses to fulfill part of the University requirements for graduation.

Honors students enter areas of concentration in which they earn their degrees and fulfill requirements established by the academic areas involved. Diplomas and transcripts indicate both degree earned and the designation of University honors scholar. Certification as University honors scholar is to be completed by the end of the penultimate semester. University honors scholars complete a minimum of 24 hours in designated honors courses.

Students may choose from two options to complete the program. In option one, students complete six to 12 credits of honors research under the guidance of a faculty mentor, culminating in an undergraduate thesis. They present the results of the research in a seminar for faculty and other students. In addition, they complete 18 credits of honors courses. Many students choose to be involved in research in their major and they may receive both departmental honors as well as University honors credit for their work. Senior design projects for engineering majors, art portfolios, and theater and music performances can be modified to meet the thesis requirements. In option two, students complete three to six credit hours in summer guided readings or research projects. In addition, students complete a three-credit senior seminar. These are part of the 24 credit hours of honors classes. While honors students are expected to enroll in an honors course each semester, demands of professional programs, etc., may make adjustments necessary, with the advisor's approval.

Normally, only courses designated as honors courses by the program count toward fulfillment of the honors program requirements. However, if a student takes courses judged by the program to be rigorous and challenging enough to qualify as honors courses, the student may petition, in advance, for permission to count the hours as honors hours. In each case, the student must submit a petition for such an exception. Each petition is judged on its own merits.

When a student is accepted into the University Honors Program, continuance depends upon satisfactory progress in hours earned and maintenance of a satisfactory cumulative grade point average as outlined below:

1-28 hours earned	3.2 GPA
29-88 hours earned	3.3 GPA
89 hours or more	3.4 GPA

If a student fails to maintain satisfactory progress toward the degree or to achieve the required minimum cumulative grade point average, the student is placed on probation in the University Honors Program for one semester. If the student has not achieved the required grade point average and/or the number of hours completed at the end of that semester, the student will be dismissed from the University Honors Program. This action does not affect the student's standing in the University or in the degree program. It does mean that the student will not be designated a University Honors Scholar upon graduation.

WVU Extension Service

http://www.wvu.edu/~exten/

Real-world learning and outreach experiences abound for undergraduate and graduate students who intern with the WVU Extension Service (WVU-ES). Part of an educational network of 105 land-grant universities, WVU-ES takes the helping hand of West Virginia University directly to thousands of West Virginians in communities scattered across the state. Through its Extension Service, the University provides a "mini-campus" in each of the state's 55 counties. The work at these locations addresses a wide variety of community issues via a nontraditional mix of learners, faculty, staff, and volunteers.

Drawing on the strengths of WVU's many academic disciplines, Extension educators target social, economic, environmental, and technical problems of communities. Some Extension educators work on WVU's traditional campuses located in Morgantown, but many of the faculty work in county settings, generally located in or near each county's government seat. Working daily with local residents, Extension faculty find their lives often intertwine with the issues that confront their local communities. They are committed to helping people find answers that work. As they solve problems along with local citizens—individually and in groups—Extension faculty and staff translate WVU's research into action.

When graduate and undergraduate students take part in this action, they find the WVU Extension Service to be a fertile, flexible provider of a variety of internship, work-study, and volunteer experiences. Extension educators may involve students in some or in all phases of their educational projects—research, design, delivery, and evaluation. Depending on the project, students may have hands-on experience with computer networks, distance education, publication design and production, curriculum design and development, and classroom teaching.

Extension's many programs are driven by just five major initiatives: leadership development, rural and community-based economic development, youth development, workforce development, and health education. Extension's program delivery, however, has roots in many career fields, including agriculture, business administration, child development, computer science, communications, environmental science, engineering, counseling and guidance, curriculum design, health education, home economics, journalism, and safety. Regardless of their academic disciplines, today's students may find rich learning experiences—and rewarding careers—among Extension's diverse educational programs. Examples include:

- WVU Extension's 4-H program builds leaders who have the confidence that comes from learning by doing. Through clubs, special interest programs, camping, school enrichment, child care, and individual study, 4-H reaches more than 44,000 youths and 7,600 adults statewide.

- Diabetes is a major problem in West Virginia. Extension's Dining with Diabetes is helping families learn how to select, prepare, and enjoy food that supports healthful eating habits. Each year, more than a thousand diabetes cooking school students attend classes in their own communities and learn how to plan and prepare meals that are appealing, tasty, and healthful.
- Thousands of children in rural and low-income communities nourish their bodies and minds through the summertime Energy Express program. A partnership of WVU Extension and state and local organizations, the program helps children build critical reading skills while providing nutritious meals and valuable mentoring.
- The First Impressions program offers West Virginia communities frank, detailed assessments of what works and what doesn't, as seen through the eyes of strangers. The towns of Grantsville, Grafton, and Logan are using this Extension program to make immediate improvements and guide long-term development.
- Each year, more than 13,000 firefighters and emergency responders throughout West Virginia improve their skills through training offered by WVU's Fire Service Extension. These programs help fire department personnel meet national certification standards and enhance their ability to protect people and property in their communities.
- More than 100 companies throughout West Virginia look to the Appalachian Hardwood Center at WVU for training and technical assistance. These companies get help in locating markets for finished products and wood residues, developing grading data for sawmills, and identifying and resolving manufacturing problems.
- Helping West Virginia workers stay well and injury-free is the goal of WVU's Safety and Health Extension. Industrial safety specialists teach employers and their workers how to protect themselves and the public from potential hazards encountered on the job.
- The WVU Extension Service has a long tradition of land stewardship. Each year, more than 9,000 farmers and gardeners seek information on ways to make their land more productive by having their soil laboratory-tested at WVU. Extension agents interpret the results and provide site-specific recommendations for fertility management.
- WVU's International Extension programs open a window to the world. Through international exchange programs, educational camps, and development projects and research studies abroad, West Virginians are learning how to cross culture and language barriers to form productive, rewarding partnerships in the global village.

At the core of a new administrative framework for Extension are a special-mission campus and three major program centers that combine field operations and campus-based program divisions. The special-mission campus is WVU Jackson's Mill Center for Lifelong Learning and State 4-H Camp. Located near Weston, WVU Jackson's Mill annually draws more than 110,000 guests, who enjoy the 525-acre retreat facility's conference, camping, and heritage facilities.

The Extension program centers are (1) Continuing Education and Workforce Development; (2) Agriculture, Natural Resources, and Community Development; (3) 4-H and Youth, Family, and Adult Development. Those themes reflect major areas identified by Extension faculty and clientele in statewide needs inventories. The program center model offers a "more natural" way for Extension faculty to be aligned as they work together to develop and deliver educational programs.

WVU Extension programs are financed via a variety of funding combinations: federal appropriations and grants; state appropriations and grants; county commission, county school board, and other local governmental appropriations; and private grants.

Graduate and undergraduate internships, work-study appointments, and volunteer service positions may be available on the Morgantown campus and in any of the 55 counties. Program priorities and funding determine the duration of appointments during regular semester and summer sessions.

For more information, contact the WVU Extension Service at (304) 293-5691; or write to 808 Knapp Hall, P.O. Box 6031, Morgantown, WV 26506-6031.

Courses

Plan for Numbering Courses

For convenience, each course of study is designated by the name of the department in which it is given and by the number of that course. The plan for numbering courses is as follows:

Courses 1–99 Developmental and community college certificate courses (does not require WVU Faculty Senate approval) and undergraduate professional development courses (courses that are designed for professional development and require students to possess a high school diploma but the course would not count toward graduation).

Courses 100 Freshman/Lower Division: Intended primarily for freshmen although they may be taken by upper-division students if needed to complete degree requirements.

Courses 200 Sophomore/Lower Division: Intended primarily for sophomores. These courses may have 100 or 200-level prerequisites.

Courses 300 Juniors/Upper Division: Intended primarily for juniors. These courses may have extensive prerequisites or be limited to specific majors.

Courses 400 Seniors/Upper Division: Intended primarily for seniors and selected graduate students. These courses are typically limited to advance undergraduates within a particular major or degree program and selected graduate students. No more than 40 percent of the credits counted for meeting requirements for a graduate degree can be at the 400 level.

Courses 500 Undergraduate Seniors and Master's Level: Courses intended for advanced undergraduate and graduate students. Seniors may enter via petition/special permission. Undergraduates in any class carrying a 500-level course number must have a 3.0 cumulative grade-point average and written approval on special forms from the course instructor and the student's advisor(s).

Courses 600 Master's Level: Courses intended for master's degree students (no undergraduate enrollment permitted).

Courses 700 Master's and Doctoral Degree Level: Courses intended for doctoral students, and advanced master's students (no undergraduate enrollment permitted).Courses 900 Professional Development: Courses intended for professional development and require students to possess a bachelor's degree, but the courses do not count toward graduation and are not applicable towards a graduate degree. Grading is S/U only.

Abbreviations Used in Course Listings

I	a course given in the first (fall) semester
II	a course given in the second (spring) semester
I, II	a course given each semester
I and II	a course given throughout the year
Yr	a course continued through two semesters
S	a course given in the summer
Hr	credit hours per course
lec	lecture period
rec	recitation period
lab	laboratory period
Conc	concurrent registration required
PR	prerequisite
Coreq	corequisite
consent	consent of instructor required
CR	credit but no grade

An asterisk (*) following credit hours listed as variable indicates that the course normally carries three credit hours. Exceptions are made only in emergencies and must be approved by the departmental chair and by the professor teaching the course.

Undergraduate Common Course Numbers

199. *Orientation to* [subject/field]. 1Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities, and opportunities.

293. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent (may be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492. *Directed Study.* I, II, S. 1-3 Hr. Directed study, reading, and or research.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty-supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

497. *Research.* I, II, S. 1-6 Hr. Independent research projects.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Course Descriptions

Accounting (ACCT)

201. *Principles of Accounting.* 3 Hr. PR: Sophomore standing. The accounting cycle from the analysis of business transactions through the preparation of financial statements; basic theory and practice with respect to accounting for assets and equities.

202. *Principles of Accounting.* 3 Hr. PR: ACCT 201. Utilization of accounting information for purposes of managerial control and decision making; cost concepts, profit and financial budgeting, analysis of financial statements.

293. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

311. *Intermediate Accounting.* 3 Hr. PR: (ACCT 201 with a grade of "B" or better) and (ACCT 202 with grade of "B" or better) and ECON 202 and ECON 225 and ENGL 102 and (MATH 150 or MATH 155) and PR or CONC: ACCT 321. Development of accounting theory and practice, with emphasis on asset accounting.

312. *Intermediate Accounting.* 3 Hr. PR: ACCT 321 and (ACCT 311 with grade of "C" or better.) Theory and practice with respect to accounting for liabilities and stockholder's equity; special problems peculiar to financial accounting; analysis of financial statements and changes in financial position.

321. *Introduction to Accounting Systems.* 3 Hr. PR: ACCT 202 and admission to the College of B and E. Accounting software for record keeping, financial analysis, and accounting policy evaluation, with emphasis on the accounting cycle.

322. *Accounting Systems.* 3 Hr. PR: ACCT 321 and BCOR 320. Analysis of data processing fundamentals and information systems analysis, design, and implementation, including necessary computer hardware and software components with particular reference to accounting information systems and the controls necessary therein.

331. *Managerial Accounting.* 3 Hr. (No credit available to students having credit for ACCT 431.) PR: ACCT 202 and ECON 202 and ECON 225 and ENGL 102 and (MATH 150 or MATH 155.) For non-accounting majors. Analysis of internal accounting practices with emphasis on use of data for performance evaluation, control, motivation through accounting systems, and decision-making.

415. *Advanced Accounting.* 3 Hr. PR: ACCT 312. Accounting for business combinations, consolidations, foreign currency translation, governmental and not-for-profit entities, and equity method investment accounting.

431. *Cost Management.* 3 Hr. PR: ACCT 202. Strategic cost management concepts and techniques used for decision making, control, and product and service costing.

432. *Advanced Cost Management.* 3 Hr. PR: ACCT 431 or consent. Advanced cost management concepts and techniques with emphasis on cost measurement systems and the evaluation and management of performance.

441. *Income Tax Accounting.* 3 Hr. PR: ACCT 311 or ACCT 331. Overview and survey of Federal income tax principles for individuals and simple corporations with emphasis on gross income, exemptions, and deductions, capital gains and losses, and tax credits.

451. *Auditing Theory.* 3 Hr. PR: ACCT 322. Auditing fundamentals, objectives, ethics, statistical samplings, standards and procedures. Emphasis on FASB and SAS disclosures.

461. *Accounting for Nonbusiness Entities.* 3 Hr. PR: ACCT 312. Accounting, reporting, and budgeting for governmental and not-for-profit entities and the use of fund accounting data for planning and control.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Special topics relevant to accounting. (Maximum of 9 semester hours in any or all courses numbered 493 offered by the College of Business and Economics may be applied toward bachelor's and master's degrees.)

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* 1-6 Hr. PR: Consent. Students will develop and complete a program of specialized studies under the supervision of a cooperating instructor. This program may not include credit for internship or employment experience.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

Advertising (ADV)

215. *Principles of Advertising.* 3 Hr. (Open to all University students.) An introduction to all sides of the advertising field and to the process, quantitative, strategic, and aesthetic, by which the sales message is planned, produced and delivered. This is the first advertising course for advertising majors and must be taken as a pre-requisite for other courses in the sequence.

310. *Typography Printing Process.* 3 Hr.

315. *Advertising Copywriting.* 3 Hr. PR: ADV 215 and admission to School of Journalism. Writing advertising copy and designing effective layouts. Elements of effective advertising: creating strategies, building campaigns, writing and rewriting, and preparing roughs and comps. Developing a portfolio. Emphasis on print advertising. (Should be taken in combination with ADV 403.)

401. *Retail Advertising.* 3 Hr. PR: ADV 315 and ADV 403. Principles and practices of retail advertising. Planning and budgeting; copy preparation and layout, evaluation and selection of media; outdoor advertising, specialty advertising.

403. *Advertising Media Analysis.* 3 Hr. PR: ADV 215. Coreq: ADV 315. Theory, evaluation, and selection of advertising media for a variety of market situations. Market analysis, media characteristics, sources of media data, and development of a media plan.

410. *Graphic Design.* 3 Hr. PR: ADV 215. Design layouts for print media. Includes buying, supervising, and scheduling of art, typography, and print material. (2 hr. lec., 2 hr. lab.)

451. *Direct Marketing.* 3 Hr. PR: ADV 315 and ADV 403. An examination of the concepts, strategies, and applications involved in direct marketing. Measurability, accountability, lists, data, and the integration of direct marketing program into total marketing efforts are discussed.

459. *Campaigns.* 3 Hr. PR: ADV 315 and ADV 403 and JRL 421 and senior standing. The capstone course in the undergraduate advertising curriculum. The course is designed to give students the opportunity to integrate all prior learning and apply it to the development of an advertising campaign for a real-world client. The actual output of the course will be a written plans book and a formal campaign presentation. (Should be taken the final semester before graduation.)

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant. (Graded Pass/Fail.)

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experimental learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development. (Graded Pass/Fail.)

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Agricultural and Environmental Education (AGEE)

101. *Global Food and Agricultural Industry.* I, II. 3 Hr. Examination of the history and current developments, structures, functions, and importance of the international food and agricultural industry; issues, concerns, and interrelationships and their impacts on American agriculture and society.

110. *Microcomputer Applications in Agricultural Education.* 3 Hr. PR: Consent. Microcomputer applications in the instructional process of agricultural education; use of applications software, agricultural software, and databases; and methods of integrating microcomputers into secondary school agriculture and extension programs.

220. *Group Organization and Leadership.* I. 3 Hr. Study of the impact of leaders and organized groups on societies. Role of groups in conveying cultural norms. Principles and techniques involved in forming and directing organizations in providing effective leadership.

250. *Shop Theory and Methods.* I. 4 Hr. Six areas of basic shop work: carpentry, cold metal work, hot metal work (forge, electric, and gas welding), sheet metal (soldering, forming, cutting, riveting), tool care, and plumbing. (1 hr. rec., 6 hr. lab.)

421. *Agricultural and Natural Resource Communications.* I, II. 3 Hr. Procedures and practices in developing, interpreting, and communicating agricultural and natural resource information; emphasis on visual materials and effective presentations. (3 hr. lec.)

430. *Methods of Teaching Agriculture.* I. 3 Hr. PR: Consent. Organization and preparation for teaching agriculture in middle and secondary schools.

431. *Adult Education in Agriculture and Natural Resources.* 2 Hr. PR: Consent. Planning and preparation for teaching adult classes and advising agricultural organizations.

440. *Principles of Cooperative Extension.* I. 2 Hr. PR: Consent. History, philosophy, and mission of the cooperative extension service. Roles and functions of extension faculty in developing and presenting extension programs.

441. *Methods in Extension Education.* 2 Hr. PR: Consent. Organization and preparation for extension teaching and the processes of communication.

442. *Program Development and Evaluation in Extension.* II. 3 Hr. PR: Consent. Planning, implementation, and evaluation of programs in rural and community development.

450. *Farm Structures.* II. 3 Hr. Study of structures required for agriculture, family housing, storage, and recreation. Includes function, planning, layout, materials, construction techniques, prefabrication, repair, remodeling, and costs. (2 hr. rec., 3 hr. lab.)

451. *Agricultural Engines.* I, II. 3 Hr. Study of power sources (gasoline, diesel, turbine, wankel, etc.) for agriculture and forestry. Operating, selection, maintenance techniques, and emissions impact on power and fuel efficiency. (2 hr. rec., 3 hr. lab.)

452. *Advanced Farm Machinery.* I. 3 Hr. Systems approach to selection, use, and operation of machinery related to agriculture, forestry, and other rural activities. Emphasis on safety and environmental impact. Use of records for management decisions, purchase, replacement, sale, or overhaul. (2 hr. rec., 3 hr. lab.)

453. *Electricity and Lighting.* 3 Hr. Properties of electricity and electrical circuits, residential wiring, selection of electric motors, use of electrical controls; and design of interior lighting, landscape lighting, and flood lighting systems. Field trip required.

454 A-Z. *Agricultural Mechanics Problems.* 1-4 Hr. PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.)

455. *Advanced Farm Mechanics.* 3 Hr.

460. *Engineering Technology for Urban Watersheds and Irrigation.* 3 Hr. Soil and water management; analysis of small watersheds and design of waterways, culverts, ponds, sediment basins, and turf irrigation systems. (3 hr. lec.)

461. *Waste Management-Composting.* I. 3 Hr. Both present and alternative waste management strategies will be examined. Students will learn how to analyze the waste stream and be able to develop management concepts which are both economically and environmentally sound. Lectures by waste management professionals will be integrated into the class to expose the students to the very latest practices and technology.

488. *Professional Agricultural Internship.* 1-12 Hr. PR: Consent.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Agricultural and Resource Economics (ARE)

110. *Agribusiness Accounting.* II. 3 Hr. Introduction to accounting for agricultural, rural, and small business managers. Emphasis on the accounting cycle, analysis, and interpretation of financial statements, income taxes, and managerial accounting. (Students having prior college credit in accounting are not eligible for this course.)

150. *Introductory Agricultural and Agribusiness Economics.* 3 Hr. Introduction to basic agricultural economics and agribusiness concepts, and the application of these concepts to agricultural and agribusinesses issues.

187. *Energy Resource Economics.* I, II. 3 Hr. Dilemmas posed for developing and modern societies by rising energy demands amid concerns for the world's environment. Economics of fuel sources and technologies, and historical and new concerns over resource scarcities.

188. *National Energy Policy.* II. 3 Hr. Resource and energy policy problems on a national level, including mineral import quotas, prorationing, federal tax and land-law policy, leasing, mineral research and education, health, and social concerns.

201. *Principles of Resource and Energy.* II. 3 Hr. PR: Third-year standing. Analyzes problems important or peculiar to mineral industry economics; exhaustion, externalities, risks, production cycle, industry structure, pricing, role of minerals in development and trade, resource planning. Energy, metals, industrial minerals. (3 hr. lec.)

204. *Agribusiness Management.* II. 3 Hr. Overview of the agribusiness decision-making process and the functions of agribusiness management; analysis of financial statements and budgeting for evaluating profitability of alternative enterprises and practices.

220. *Introductory Environmental and Resource Economics.* II. 3 Hr. Economic analysis of environmental pollution, natural resource conservation and management, outdoor recreation, public land use, wildlife resources, water use, property rights, and benefit-cost issues.

293 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

382. *Agricultural and Natural Resources Law.* I. 3 Hr. Introduction to legal concepts, principles, and practices related to environmental, natural resource, and agricultural issues; in the context of the legal system within which statues are enacted, administered, and enforced.

401. *Applied Demand Analysis.* II. 3 Hr. Consumer demand economics applied to environmental, natural resource, and agricultural issues; analysis of factors that influence demand and determine prices; special applications to non-market, environmental, and natural resource amenities.

402. *Applied Production Economics.* I. 3 Hr. Production economics applied to agricultural, environmental, and resource issues; production, multiple-product and cost functions, and joint production; effects of environmental and natural resource management regulations on the production process.

406. *Agribusiness Planning.* I. 3 Hr. PR: ARE 204 or Consent. Application of economic and management principles to agribusiness planning; consideration of risk and uncertainty in agribusiness planning; formulation of economic models for determining optimum allocation of resources for production processes.

410. *Environmental and Resource Economics.* I. 3 Hr. PR: (ARE 401 and ARE 402) or ECON 301 or Consent. Economic analysis of natural resource and environmental problems; management of renewable and non-renewable resources and environmental amenities; market failure, externalities, benefit-cost and risk analysis; property rights and the "taking" issue.

411. *Rural Economic Development.* I. 3 Hr. Economic trends, development policies, and analysis of rural economies in the United States. Rural diversity, development concepts, rural planning, public programs and policies, and community analysis methods.

413. *Economic Development.* I, II. 3 Hr. PR: ECON 201 and ECON 202. The problems, changes, and principal policy issues faced by nonindustrialized countries.

420. *Agricultural Cooperatives.* I. 3 Hr. History, principles, organization, management, taxation, and legal aspects of agricultural, marketing, supply, and service cooperatives in the U.S. Development of non-agricultural cooperatives. (Offered in fall of odd years.)

431. *Marketing Agricultural Products.* II. 3 Hr. Organization, functions, and analysis of the agricultural marketing system. Food consumption, exports, price analysis, marketing costs, market power, commodities futures market, food safety, and government regulations.

435. *Marketing Livestock Products.* I. 3 Hr. Livestock marketing practices and policies. Supply and demand, livestock price cycles, grading, marketing alternatives, processing, and retailing. Economic analysis of alternatives, current issues, and trends. (Offered in fall of even years.)

440. *Futures Markets and Commodity Prices.* I. 3 Hr. Analysis of price-making forces which operate in the market place; emphasis on major agricultural and mineral commodity and futures markets.

445. *Energy Economics.* II. 3 Hr. Analysis of the energy sector and its relationship to the rest of the economy; energy security, deregulation, full cost pricing, substitutability among energy sources, transmission, new technologies, environmental considerations.

450. *Agriculture, Environmental, and Resource Policy.* II. 3 Hr. PR: (ARE 401 and ARE 402) or ECON 301 or Consent. Economic analysis of agricultural, natural resource, and environmental policies; problems of externalities and market failure, and alternative policies for addressing such problems; benefits and cost of alternative policies.

461. *Agribusiness Finance.* II. 3 Hr. An overview of financial analysis and the application of financial principles to small, rural, and agricultural businesses. Includes applications of financial analysis computer software.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Agricultural Biochemistry (AGBI)

199. *Orientation to Biochemistry.* I. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities, and opportunities.

410. *Introductory Biochemistry.* I, II. 3 Hr. PR: 8 hr. general chemistry, CHEM 231 or equivalent. Introduction to chemistry of cellular constituents (proteins, amino acids, carbohydrates, lipids, nucleic acids, enzymes, and coenzymes) and their metabolism in animals and plants.

411. *Introductory Biochemistry Laboratory.* I, II. 1 Hr. CONC: AGBI 410. Experiments to demonstrate certain principles and properties of animal and plant biochemicals.

480. *Assigned Topics.* I, II. 1-4 Hr.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* II. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Agriculture (AGRL)

111. *Professions in Agriculture.* I. 1 Hr. An overview of subject matter related to agriculture in current society. Emphasis on agricultural organizations, environmental and food issues, careers, and programs within the college.

112. *Professions in Agriculture.* II. 1 Hr. Continuation of AGRL 111.

293. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

400. *Agricultural Travel Course.* S. 1-6 Hr. Tour and study of production methods in major livestock and crop regions of the United States and other countries. Influence of population, climate, soil, topography, markets, labor, and other factors on agricultural production.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492. *Directed Study.* I, II, S. 1-6 Hr. Directed study, reading, and/or research.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Agriculture and Forestry (AG&F)

480. *Assigned Topics.* I, II, S. 1-4 Hr. Assigned studies of an interdisciplinary nature with a particular specialty area in agriculture and forestry. Students must be in good standing and have prior approval of a proposed outline from the division director's office.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Agronomy (AGRN)

125. *Soil Judging.* I. 1 Hr. PR: Consent. Field study of soils for classification and land use evaluation. (3 hr. lab.) (May be repeated for max. 3 credits.)

202. *Principles of Soil Science.* I, II. 3 Hr. PR: CHEM 111 or equiv. and PR or Conc: AGRN 203. Introductory course. Soils as a natural resource emphasizing physical, chemical, and biological properties in relation to plant growth and production, land use and management, soil and water pollution, and environmental protection.

203. *Principles of Soil Science Laboratory.* I, II. 1 Hr. PR or Conc: AGRN 202 or Consent.

315. *Turfgrass Management.* 3 Hr. PR: AGRN 202 and AGRN 203 and PLSC 206 or Consent. Establishment, maintenance, and adaptation of grasses for lawns, golf courses, parks, athletic and playing fields, and roadsides. Associating differential plant responses with soil, climatic, and biotic factors. (3 hr. lec.) (Offered in fall of odd years.)

410. *Soil Fertility.* I. 3 Hr. PR: AGRN 202 and AGRN 203 and CHEM 116. Effect of soil chemical and physical properties on soil fertility; evaluation of essential and toxic nutrients and the controls on their availability; fertilizer and lime use; soil fertility evaluation. (3 hr. lec.)

415. *Soil Survey and Land Use.* I. 3 Hr. PR: AGRN 125 or Consent. Identification of morphological characteristics and taxonomic units of soil; techniques of writing soil pedon and mapping unit descriptions; techniques of preparing soil maps; evaluation of soil for land use planning. (2 hr. lec., 3 hr. lab.) (Offered in fall of odd years.)

417. *Soil Genesis and Classification.* I. 4 Hr. PR: AGRN 125 or Consent. Origin and formation of soils; principles of soil classification; study of soil pedons and polypedons; influence of soil-forming factors and processes. Two Saturday field trips required. (3 hr. lec., 3 hr. lab.) (Offered in fall of even years.)

420. *Soil Microbiology.* I. 3 Hr. PR: ENVM 241. Microbiology and biochemistry of the soil environment. Occurrence, distribution, ecology, and detection of micro-organisms in soil. (Offered in fall of even years. Also listed as ENVM 420 and ENVP 420.)

425. *Environmental Soil Management.* I. 3 Hr. PR: AGRN 202 and AGRN 203. This course provides a foundation for utilizing creative solutions and technical knowledge in preserving and enhancing soil and water quality. Soil conservation, precision agriculture, and nutrient management for protection of soil and water quality are covered. (Also listed as ENVP 425.)

430. *Soil Physics.* II. 3 Hr. PR: AGRN 202 and AGRN 203. Physical properties of soils; water and air relationships and their influence on soil productivity. (Offered in spring of even years.)

451. *Weed Control.* I. 3 Hr. PR: PLSC 206 and AGRN 202 and AGRN 203 or Consent. Fundamental principles of weed control. Recommended control measures for and identification of common weeds. (2 hr. lec., 1 hr. lab.) (Offered in fall of odd years. Also listed as ENVP 451.)

452. *Grain and Special Crops.* II. 3 Hr. PR: PLSC 206 and AGRN 202 and AGRN 203 or Consent. Advanced study of methods in the production of grain and special crops. Varieties, improvement, tillage, harvesting, storage, and use of crops grown for seed or special purposes. (Offered in spring of even years.)

454. *Forage Crops.* I. 3 Hr. PR: PLSC 206 and AGRN 202 and AGRN 203, or Consent. All phases of forage crop science including ecology, taxonomy, management practices used for the production of forage and seed, and forage composition, quality, and utilization. (3 hr. lec.)

455. *Reclamation of Disturbed Soils.* II. 3 Hr. PR: Junior standing or above. Principles of soil science, geology, hydrology, and engineering will be applied to surface mine planning, overburden handling during mining, soil replacement and amendments, revegetation practices, acid mine drainage control and treatment, hazardous wastes, and land management of disturbed areas. Field trip required. (Also listed as ENVP 455.)

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Air Force and Aerospace Studies (AFAS)

131. *The Air Force Today 1.* 2 Hr. The air force in the contemporary world through a study of the total force structure, strategic offensive and defensive forces, general purpose forces, aerospace support forces, and separate operating agencies. (Also includes leadership laboratory.)

132. *The Air Force Today 2.* 2 Hr. Continuation of USAF 131.

251. *The Air Force Way 1.* 2 Hr. The development of air power from dirigibles and balloons through the peaceful employment of U.S. air power in relief missions and civic actions programs in the late 1960's and the air war in Vietnam; leadership and managerial communicative skills are stressed by having students prepare both written and oral presentations. (Also includes leadership laboratory.)

252. *The Air Force Way 2.* 2 Hr. Continuation of USAF 251.

293. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

371. *Air Force Leadership and Management 1.* 3 Hr. PR: GMC or equiv. (Equivalent credit may be granted by WVU director of Admissions and Records and the professor of Aerospace Studies on the basis of prior military service or ROTC training other than courses in Aerospace Studies and six weeks of field training.) Course focuses on leadership, management, and the progressive development of communicative skills needed by junior officers. It emphasizes the individual as a manager in the air force. Individual motivational and behavioral processes, leadership, communication, and group dynamics are covered to provide a foundation for the development of the junior officer's professional skills. Organizational power, politics, and managerial strategy and tactics are discussed within the context of business and military organizations. Students will make field trips, prepare individual and group presentations for class, write reports, and participate in group discussions, seminars, and conferences. (Also includes leadership laboratory.)

372. *Air Force Leadership and Management 2.* 3 Hr. PR: USAF 371. Continuation of USAF 371.

481. *Preparation for Active Duty 1.* 3 Hr. PR: USAF 371 and USAF 372. The course is a study of U.S. national security policy which examines the formulation, organization, and implementation of national security; context of national security; evolution of strategy; management of conflict; and civil-military interaction. It also includes blocks of instruction on the military profession/officership and the military justice system. The course is designed to provide future air force officers with a background of U.S. national security policy so they can effectively function in today's air force. (Also includes leadership laboratory.)

482. *Preparation for Active Duty 2.* 3 Hr. PR: USAF 371 and USAF 372 and USAF 481. Continuation of USAF 481. USAF 131, 132, 251, 252, 371, 372, 481, and 482 may be taken out of sequence, if unusual circumstances warrant and the student has received approval from the professor of Aerospace Studies.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Anatomy (ANAT)

301. *Principles of Human Anatomy.* 3 Hr. PR: Admission to WVU's Dental Hygiene, Nursing, or Pharmacy program or Consent. Lectures and demonstrations on the gross and microscopic anatomy of the human body including development.

302. *Gross Anatomy.* 3 Hr. PR: ANAT 301 and Consent. Functional gross anatomy of the back, extremities, head, and neck. (For physical therapy students.)

309. *Oral Histology.* 2 Hr. PR: ANAT 301. Histological structure and embryological development of the teeth, tissues, and organs of the oral cavity. (Electronic delivery)

Animal Nutrition (ANNU)

260. *Animal Nutrition.* II. 3 Hr. PR: Two courses in chemistry. Digestion and metabolism of food nutrients, nutrient requirements of farm animals, and nutritive values of feeds and rations.

361. *Applied Nutrition 1.* 3 Hr. PR: ANNU 260. Feedstuffs, feed processing storage and additives, nutrient requirements and ration formulation for beef and dairy cattle, sheep, and horses. (2 hr. lec., 1 hr. lab.)

362. *Applied Nutrition 2.* 3 Hr. PR: ANNU 260 Applied feeding practices, nutrient requirements, and ration formulation for poultry, swine, laboratory, and companion animals. (2 hr. lec., 1 hr. lab.)

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Animal Physiology and Breeding (ANPH)

301. *Introduction to Animal Physiology.* I. 3 Hr. PR: BIOL 101 and BIOL 102 or Consent. The function and regulation of the principal systems of the animal body.

400. *Growth and Lactation Physiology.* II. 3 Hr. PR: ANPH 301 or Consent. Animal life cycles; nature of growth and lactation; effects of biological, environmental, and social-psychological variants; physiological regulation and control.

405. *Animal Physiology Laboratory.* I. 2 Hr. PR: ANPH 301 or Consent. Laboratory study of the physiological systems of animals and the influences of environment on these systems. (4 hr. lab.)

424. *Physiology of Reproduction.* II. 3 Hr. PR: Course in biology. Comparative physiology of reproduction in higher animals; endocrine functions involved in reproduction; genetic and environmental variations in fertility mechanisms.

430. *Breeding of Farm Animals.* 3 Hr. PR: Course in Genetics or Consent. Application of principles of quantitative genetics to the improvement of farm animals. (Offered in spring of odd years.)

480. *Behavioral Patterns of Animals.* 3 Hr. Examination of the bases for exhibition and control of behavioral patterns of domesticated and nondomesticated species. (2 hr. lec., 3 hr. lab.) (Offered in spring of even years.)

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Animal Production (ANPR)

308. *Animal Production Experience.* I, II. 1-4 Hr. Experience in operating a dairy or livestock farm, including layers or broilers, calving, lambing, or farrowing of hogs. Can be repeated up to a maximum of 4 credits. (3 hr. lab./per hr. of credit.)

336. *Dairy Cattle History and Selection.* II. 3 Hr. To familiarize the student with the breeds of dairy cattle as well as modern concepts in phenotype and performance record evaluation. (Two labs.)

338. *Horse, Livestock, Poultry Evaluation.* II. 3 Hr. Appraisal of horses, cattle, sheep, poultry, and swine. Evaluation of scientific techniques used in selecting those species. Tours of representative flocks, herds, and stables will be required. (Two 3-hr. labs.)

339. *Advanced Evaluation of Animal Products.* I. 1-4 Hr. PR: FDSC 334 or ANPR 336 or ANPR 338 or Consent. Advanced selection, evaluation, and grading of domestic livestock species and animal products. Tours of representative flocks, herds, and processing plants will be required. Can be repeated up to a maximum of four credits. (3 hr. lab./per hr. credit.)

340. *Poultry Production 1.* 3 Hr. PR: ANNU 260. Special phases of broiler and egg production, disease control, labor-saving studies, and recent designs in housing and equipment for all types of poultry. (3 hr. lec.)

341. *Beef Production.* I. 3 Hr. PR: ANNU 260. Applying the principles of breeding, nutrition, physiology, and economics for the production of beef cattle.

343. *Beef Production Laboratory.* I. 1 Hr. Coreq: ANPR 341. Experiences in beef cattle management, including feeding, handling, health programs, and farm visits. (3 hr. lab.)

344. *Light Horse Science.* II. 3 Hr. PR: ANNU 260. Application of breeding, nutrition, physiology, and pathology to production and management of light horses.

350. *Milk Production.* 3 Hr. PR: ANNU 260. Feeding and management of dairy cattle. (2 hr. lec., 3 hr. lab.) (Offered in spring of even years.)

353. *Pork Production*. 3 Hr. PR: ANNU 260. Physiological and economical bases of pork production. (2 hr. lec., 3 hr. lab.) (Offered in fall of odd years.)

356. *Small Ruminants*. 3 Hr. PR: ANNU 260. Genetics, nutrition, physiology, health, and management of small ruminants in production of fiber, meat, and milk, in local, regional, and global contexts. (Offered in spring of even years.)

367. *Poultry Production*. I. 3 Hr. PR: ANNU 260. Special phases of broiler and egg production, disease control, labor-saving studies, and recent designs in housing and equipment for all types of poultry.

369. *Poultry Production Laboratory*. I. 1 Hr. Coreq: ANPR 367. Laboratory study of poultry production systems, related feed manufacturing, and product processing practices. (3 hr. lab.)

490. *Teaching Practicum*. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience*. I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics*. I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar*. I, II, S. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

496. *Senior Thesis*. I, II, S. 1-3 Hr. PR: Consent.

498. *Honors*. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Animal and Veterinary Science (A&VS)

101. *Orientation: First-Year Experience*. 1 Hr. Support the first-year student to make a successful transition from high school to college; develop a better understanding of the learning process including critical thinking; and acquire basic academic and personal "survival skills."

105. *Professional Orientation*. I. 2 Hr. PR: Freshman standing or Consent. Orientation to WVU and the academic programs in the Division of Animal and Veterinary Sciences; related career and professional opportunities. Field trips required.

150. *Introduction to Animal Science*. II. 2 Hr. Survey of major disciplines in animal and veterinary sciences with emphasis on related terminology; study of the development of breeds of livestock and their identification.

180 A. *Assigned Topics*. I, II, S. 1-4 Hr. per semester. To be eligible to register in A&VS 180, the student must: (1) be in good standing, (2) obtain approval of the instructor supervising the topics, and (3) approval from the instructor assigned the course responsibility.

199. *Orientation to Biochemistry*. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities, and opportunities.

251. *Principles of Animal Science*. I. 4 Hr. A comparative study of the production of meat, milk, eggs, and wool. Nutrition, physiology genetics, hygiene and physical environment, and economics are discussed as bases for sound managerial decisions. (1 hr. lab.)

275. *Companion Animal Science*. I. 3 Hr. Basic physiology, nutrition, and genetics; economic and ethical consideration of pet ownership; benefits of companion animals in society; aspects of handling and training, behavior, and common health diseases and parasite problems of pet animals.

293 A-Z. *Special Topics*. I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

402. *Values and Ethics*. 3 Hr. PR: Senior standing or Consent. Current ethical aspects in agriculture and forestry and their impact on societal values.

451. *Current Literature in Animal Science*. I. 3 Hr. PR: ANNU 260. Evaluation of current research in animal science; its application to production and management. Note: Previously listed as ANPR 250.

480 A-Z. *Assigned Topics*. I, II, S. 1-4 Hr. To be eligible to register in A&VS 480, the student must: (1) be in good standing, (2) obtain approval of the instructor supervising the topic, and (3) approval from the instructor assigned the course responsibility.

490. *Teaching Practicum*. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience*. I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

494. *Seminar*. I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis*. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Arabic (ARBC)

101. *Elementary Modern Standard Arabic 1.* 3 Hr.

102. *Elementary Modern Standard Arabic 2.* 3 Hr. PR: ARBC 101. Cont. of ARBC 101.

203. *Intermediate Modern Standard Arabic 1.* 3 Hr. PR: ARBC 102, or equiv. Cont. of ARBC 102.

204. *Intermediate Modern Standard Arabic 2.* 3 Hr. PR: ARBC 203 or consent. Cont. ARBC 203.

293. *Special Topics.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Art (ART)

101. *Appreciation of Visual Arts.* 3 Hr. The course encompasses the study of outstanding works of the visual arts from past times to the present: (1) sources of the creative impulse, and (2) relationship of art to the civilization producing.

102. *Non-Major Ceramics.* 3 Hr. The course is designed to teach basic ceramic skills associated with beginning pottery. Emphasis is on throwing techniques, trimming, handle attachment, basic ceramic design, glazing, and studio practices.

103. *Materials and Procedures.* 3 Hr. The course is designed for elementary education majors, to familiarize the student with two- and three-dimensional media, processes, and concepts.

105. *Survey of Art History 1.* 3 Hr. The course examines the history of the visual arts in world cultures from prehistoric periods to the fourteenth century.

106. *Survey of Art History 2.* 3 Hr. The course examines the history of the visual arts in world cultures from the fourteenth century to the present.

111. *Drawing 1.* 3 Hr. The course emphasizes fundamental principles of drawing with a focus on building basic skills through direct observation, using traditional graphic media, and expression.

112. *Drawing 2.* 3 Hr. The course emphasizes fundamental principles of drawing with a focus on more expressive approaches to basic problems. Greater emphasis is placed on abstraction and non-traditional drawing processes and media.

121. *2-D Visual Foundation.* 3 Hr. The course provides an introduction to the fundamental principals and concepts of two-dimensional image making with an emphasis on color theory and design. Through creative assignments students develop abilities and visual awareness emphasizing the basics of color perception, form, proportion, and rhythm.

122. *3-D Visual Foundation.* 3 Hr. The course incorporates projects involving abstract and representational ideas in three dimensions and investigates the basic concepts of line, plane, volume, form, mass, texture, composition, and time.

199. *Orientation to Art.* 1 Hr. Required for all studio art majors. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities, and opportunities. Faculty assists students in establishing career goals. Course includes a mandatory portfolio review of all first-year art majors.

211. *Figure Drawing.* 3 Hr. PR: ART 111 and ART 112 and ART 121 and ART 199. This class concentrates on compositional structure from the human figure. Students will investigate organic nature of the figure and its representation in space using a wide variety of media and processes. (May be repeated for credit.)

212. *Advanced Drawing.* 3 Hr. PR: ART 111 and ART 112 and ART 121 and ART 199. This class expands media possibilities, and examines the variables of image-making while establishing personal expression. The course is designed to develop analytical and problem solving skills as well as technical processes. (May be repeated for credit.)

213. *Painting.* 3 Hr. PR: ART 111 and ART 112 and ART 121 and ART 199. The course serves as an introduction to painting, with concentration on basic structure, techniques, and imagery of historic and contemporary painting. Emphasis is on the development of skills in rendering works which convincingly express light, color, and form integral to the medium.

214. *Painting.* 3 Hr. PR: ART 111 and ART 112 and ART 121 and ART 199. The course provides the essential structure, techniques, and iconography of painting. Its modern development, augmenting the traditional languages of painting, are clarified and isolated.

223. *Introduction to Graphic Design.* 3 Hr. PR: ART 111 and ART 112 and ART 121 and ART 199. The course emphasizes the application of traditional and technological skills emphasizing color, composition, symbolic drawing, and typography fundamental to the field of graphic design.

224. *Graphic Design 2.* 3 Hr. PR: ART 223. The course emphasizes advanced typography, sequential projects, and complex compositions, and includes preparation as well as review of upper level entrance portfolios.

226. *Introduction to Sculpture.* 3 Hr. PR: ART 111 and 112 and ART 122 and ART 199. The course focuses on creative expression using basic traditional materials and techniques. Students explore aesthetics and contemporary issues while acquiring a working knowledge of various sculptural media.

227. *Sculpture.* 3 Hr. PR: ART 111 and ART 112 and ART 122 and ART 199. New construction techniques including stretched canvas over wood encaustics, molds, plasticene, and figure modeling will aid the students in developing problem solving skills related to aesthetics and formal sculptural issues.

230. *Printmaking—Intaglio and Relief.* 3 Hr. PR: ART 111 and ART 112 and ART 121 and ART 199. The course is a fundamental printmaking class concerned with creating an understanding and sensitivity towards intaglio processes and techniques. Students explore and develop visual ideas and images using non-traditional approaches.

231. *Printmaking—Lithography.* 3 Hr. PR: ART 111 and ART 112 and ART 121 and ART 199. The course is an introduction to the fundamental processes of lithography with a focus on developing imagery and technical proficiency. Students acquire a working knowledge of the medium while examining aesthetics, contemporary discourse, and history as an art form.

232. *Photography.* 3 Hr. PR: ART 111 and ART 112 and ART 121 and ART 199. The class provides an introduction to the fundamentals of black and white photography. This course covers the tools, materials, and principles of the photographic art, focusing on both the technical and visual aspects of the medium.

233. *Photo Design.* 3 Hr. PR: ART 224. Emphasis is placed on the use of large and small format cameras, studio photography, darkroom techniques, and lighting. Projects are developed to complement the graphic design studio courses by exploring indoor and outdoor assignments.

234. *Introduction to Photography 2.* 3 Hr. PR: ART 232. Continued new techniques of black and white photography. Emphasis on processes in the darkroom, specialized lighting methods and use of larger format cameras. Personal and artistic expression will be promoted through projects and critiques.

240. *Ceramics.* 3 Hr. PR: ART 111 and ART 112 and ART 122 and ART 199. The course covers basic ceramic techniques including throwing, trimming, ceramic design, glazing, firing, and studio practices. Lectures cover basic ceramic material, information, and studio procedures.

245. *Art History: Greek and Roman.* 3 Hr. PR: ART 105 and ART 106. The arts of the Aegean world, c. 2000 BCE, Greece and Rome to 400 CE are emphasized. The visual examples will be critically examined. Architecture, sculpture, and painting will be included

246. *Art History: Medieval.* 3 Hr. PR: ART 105 and ART 106. The arts of Europe from c. 312 to c. 1350 are examined. The theoretical, historical, and literary contexts for the images will be established. Architecture, sculpture, painting, and portable arts will be included.

247. *Art History: Northern Renaissance.* 3 Hr. PR: ART 105 and ART 106. The arts of Northern Europe from 1350 to 1560 will be studied in a historical and theoretical context. Painting and sculpture will be the focus of study.

248. *Art History: Italian Renaissance.* 3 Hr. PR: ART 105 and ART 106. Early Renaissance through Mannerism. The course will emphasize both the historical context and theoretical foundation of 15th and 16th-century Italian art and architecture.

249. *Art History: Baroque.* 3 Hr. PR: ART 105 and ART 106. The course examines the art of the late 16th through 18th centuries of both Northern and Southern Europe. Issues of historical context, and theoretical interpretation are emphasized.

250. *Art History: Nineteenth Century.* 3 Hr. PR: ART 105 and ART 106. The course focuses upon European and American art from the late 18th century through 1900. Issues of theory, historical context and literary foundation will be considered

252. *Art History: American.* 3 Hr. PR: ART 105 and ART 106. This course will treat the arts in the United States from the Colonial era to 1960. Emphasis is placed upon factors which define American art and the critical foundations for the works.

254. *Art Theory.* 3 Hr. The course will examine development and tradition of the literature of art theory and its relationship to artistic practice.

255. *Women in Art.* 3 Hr. The course examines the art of female artists and of women as subjects in art. There will be a historical view with concentration on 20th century work. Critical theories are emphasized

264. *Introduction to Art Education.* 3 Hr. PR: ART 105 and ART 106 and ART 111 and ART 112 and ART 121 and ART 122 and 6 hours studio. Contemporary art education and resources that support its practices. Students also interact with experienced K-12 art specialists and their various grade levels.

265. *Art Education: Elementary.* 4 Hr. PR: ART 264. This course is designed around the discipline-based content and character of art education at the elementary level. Emphasis is placed on curriculum development which is child centered. Students gain practicum experiences in the schools. Content is based on the national standards.

266. *Art Education: Secondary.* 4 Hr. PR: ART 264. The course explores curriculum development at the secondary level based on the discipline-based content and character of art education. Methods and techniques of instruction are examined in coursework and practicum experiences in the schools. Content is based on the national standards.

270. *Introduction to Electronic Media 1.* 3 Hr. PR: ART 100 and ART 112 and ART 121 and ART 122. Class provides introduction to fundamentals of digital media. Explores digital photography, animation multimedia. Covers use of various software, focuses on sound, technical foundation, and aesthetic proficiency in these media.

271. *Introduction to Electronic Media 2.* 3 Hr. PR: ART 270. A continued exploration into applications and aesthetics of digital media. Attention is given to historical and contemporary critical contest for this media. Students encouraged to create hybirds between media and digital approaches.

293 A-Z. *Special Topics.* 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

313. *Painting.* 1-15 Hr. PR: ART 213 and ART 214. The course reaffirms and expands formal criteria established in 213 and 214 and directs individual research into personal, historical, and contemporary painting issues in oil, acrylic, and related media. (May be repeated for credit.)

323. *Graphic Design 3.* 1-12 Hr. PR: ART 224. Varied hypothetical projects give students a methodology for solving applied design projects in a range of formats. This class will deal with a combination of computer graphics, book arts, publication design, and multi-media projects. Portfolio review. (May be repeated for credit.)

324. *Graphic Design 4.* 1-9 Hr. PR: ART 323. Senior graphic design studio includes a model studio with real projects, most of which are produced and printed. Emphasis is on developing professional skills in design and design management. (May be repeated for credit.)

326. *Sculpture.* 1-15 Hr. PR: ART 226 and ART 227. Students continue to examine personal iconography as it pertains to aspects of contemporary sculpture. Topics explored are concept-oriented, using stone, concrete, glass, and emphasizing craftmanship and aesthetic issues. (May be repeated for credit.)

327. *Installation Art.* 1-15 Hr. PR: ART 122 and ART 199. Students investigate this contemporary art form through a series of temporary, site-specific sculptural environments. Conventional art media and concepts are challenged as students develop alternative solutions to creative problems. (May be repeated for credit.)

330. *Printmaking.* 1-15 Hr. PR: ART 230 and ART 231. An exploration of color printmaking, advancing imagery through critical contexts. Students focus on technical mastery in lithography, intaglio, relief and alternative processes, expand their knowledge of printmaking's history, and develop creative problem solving skills. (May be repeated for credit.)

332. *Intermediate Photography.* 3 or 6 Hr. PR: ART 232 and ART 233. Students focus on technical mastery of photography. Expands on the formal and critical criteria established in the introductory courses, and directs creative research into personal, historical, and contemporary issues.

333. *Alternative Photography.* 1-15 Hr. PR: ART 232. Alternative photography emphasizes creating and manipulating images from and for the camera. Techniques include the traditional silver gelatin print, cyanotypes, liquid light and gum bichromate. A basic knowledge of photography is recommended. (May be repeated for credit.)

335. *Forensic Photography.* 3 Hr. Students focus on the fundamentals of photography, how to handle a camera, and expose film correctly. Include unique forensic environments encountered in forensic work includes fingerprints, crime scenes, and disaster scenes.

340. *Ceramics.* 1-15 Hr. PR: ART 240 and ART 241. This intense studio concentration is designed to prepare students for graduate studies and/or professional studio practices. Historical and contemporary design issues, kiln design and building, firing, glaze and clay formulation, studio practices, and advanced level throwing and hand building techniques will be studied. (May be repeated for credit.)

341. *Ceramic Production Methods.* 3 Hr. PR: ART 240 or Consent. This course expands the student's experiences in ceramics through the use of industrial techniques, production equipment, and business tools for the development, production, and marketing of ceramic products.

350. *Art History: Nineteenth Century.* 3 Hr. PR: ART 105 and ART 106. The course focuses upon European and American art from the late 18th century through 1900. Issues of theory, historical context, and literary foundation will be considered.

351. *Art History: Modern.* 3 Hr. PR: ART 105 and ART 106. The revolutionary experience of modern art, from its foundation in 19th-century European movements through the 1950's will be emphasized. Critical theory and historical context stressed.

352. *Art History: American.* 3 Hr. PR: ART 105 and ART 106. This course will treat the arts in the United States from the Colonial era to 1960. Emphasis is placed upon factors which define American art and the critical foundations for the works.

353. *Art History: Contemporary.* 3 Hr. PR: ART 105 and ART 106. This course explores the various artistic movements from World War II to the present. Emphasis will be given to the change from modern to postmodern. Familiarity with images and critical texts is expected.

355. *Art History: Women in Art.* 3 Hr. The course examines the art of female artists and of women as subjects in art. There will be a historical view with concentration on 20th century work. Critical theories are emphasized.

357. *Modern Art Theory.* 3 Hr. PR: ART 105 and ART 106 and 200-level art history. The course will examine the development of modern art theory and its relationship to artistic practice. Emphasis will be placed on the critical and theoretical examination of modernism and post modernism.

365. *Pre-Student Teaching.* 3 Hr. PR: ART 265 and ART 266. The course concentrates on curriculum development, research methods, and delivery strategies for K-12 art specialists preparing for their professional semester.

370. *Intermediate Electronic Media.* 3 or 6 Hr. PR: ART 270 and ART 271. Students will expand explorations in video production from ART 271 and examine opportunities of creative works on the Internet. Building video skills and methodologies, students will create dynamic and artistic web pages.

371. *Interactive Art.* 3 or 6 Hr. PR: ART 270 and ART 271. Students will utilize skills learned in previous electronic media courses to create projects incorporating a variety of knowledge and interactive softwares. Attention is given to historical and contemporary critical context.

401. *Art History: Senior Project.* 1-15 Hr. PR: Consent. This class concentrates upon independent research, closely supervised, on a topic of student's selection. This must be well-defined and contain historical, critical, and theoretical issues. Contractual course.

413. *Senior Projects in Painting.* 6 Hr. PR: 18 hrs. of ART 313. Advanced study directed toward completion of senior-level projects. Developed to meet individualized creative goals. The course culminates with participation in a senior student exhibition/other exit requirements.

425. *Graphic Design: Senior Project.* 3 Hr. PR: ART 324. This course is focused on the development of an undergraduate thesis in which each project is individually defined with an umbrella topic. Formats and content vary but each project culminates in a thesis exhibition and an individual audio/visual presentation. (May be repeated for credit.)

426. *Senior Projects in Sculpture.* 6 Hr. PR: 18 hrs of ART 326 or Consent. Advanced study towards completion of senior-level projects, developed to meet individualized creative goals. The course culminates with participation in a senior student exhibition and other exit requirements.

430. *Senior Projects in Printmaking.* 6 Hr. PR: 18 hrs. of ART 330 or consent. Advanced study directed toward completion of senior-level projects. Projects developed to meet individualized creative goals. The course culminates with participation in a senior student exhibition and other exit requirements.

440. *Senior Projects in Ceramics.* 6 Hr. PR: 18 hrs of ART 340 or consent. Advanced study towards completion of senior- level projects, developed to meet individualized creative goals. The course culminates with participation in a senior student exhibition and other exit requirements.

470. *Senior Projects in Intermedia.* 6 Hr. PR: Consent. Advanced study towards completion of senior-level projects in Intermedia. Projects are developed to meet individualized goals. The course culminates with participation in a senior student exhibition as well as other exit requirements.

491 A-Z. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

494 A. *Seminar.* 1-3 Hr. PR: Consent. The focus of this seminar is analysis of theoretical and professional studio issues as well as trends in contemporary art practice and criticism. Emphasis will be on comparative media, interdisciplinary forms of expression, and significant cultural concerns outside of visual arts practice. Topics will be coordinated and involve the Visiting Artist Series.

496. *Senior Thesis.* 1-3 Hr. PR: Consent

498 A-Z. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Astronomy (ASTR)

106. *Descriptive Astronomy.* 3 Hr. The celestial sphere, star time, solar time, Kepler's laws, H-R diagram, and modern developments. No sophisticated mathematics used; only simple geometrical arguments employed.

290. *Teaching Practicum.* 1-3 Hr.

293. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

316. *Astronomy for Teachers.* 3 Hr. PR: Consent. Basic concepts and methods in astronomy and how to teach them using the celestial sphere and geometrical tools. Observational work at night. The use of a telescope and camera.

355. *Intermediate Astronomy.* 3 Hr. PR: MATH 156 or consent. Measurement of the universe; trigonometric parallax, statistical parallax, moving clusters, cluster H-R diagrams, masses of various binary systems, Kepler's Laws, and the three-body problem.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Athletic Coaching Education (ACE)

100. *The Total Athlete.* 3 Hr. In-depth analysis of topics associated with being an athlete, i.e., attitude, academics, media, peer pressure, racism in sports, recruiting, AIDS, rape, stress/time management, suicide, sportsmanship, ethics, drugs (types and testing), agents, coping with adversity, eating disorders, gambling, life after sports, non-revenue sports, pro sports, violence in sports, gender equity, and personal growth.

101. *Wrestling Methods.* 3 Hr. An in-depth look at the various methods and weight categories of wrestling.

102. *Coaching Education.* 3 Hr. An in-depth look into the various aspects of coaching education.

103. *Coaching Special Olympics.* 3 Hr. An in-depth look into the techniques and methods used in coaching special olympics.

104. *CPR/First Aid for Coaches.* 3 Hr. Certification and practicum for CPR and first aid for all coaches.

105. *Nutrition for Coaches.* 3 Hr. General nutrition and dietary requirements to aid coaches and their athletes.

106. *Introduction to Physical Education.* 3 Hr. A general overview into the teaching/methodologies, etc. in a physical education/coaching education environment.

107. *Coaching Education Administration.* 3 Hr. This course examines the fundamental areas necessary to be knowledgeable about administering athletic programs.

168. *Sport Officiating.* 2 Hr. Study of officiating.

256. *Principles and Problems of Coaching.* 3 Hr. Designed to students with principles and problems of interscholastic athletic coaching.

293 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

330. *Coaching Education Administration.* 3 Hr. An administrative focus of leadership, finance, fundraising, planning, facility development, personnel supervision, public relations, rules and regulations, purchase and care of equipment, and the conducting of athletic events.

357. *Techniques of Coaching: Swimming.* 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised, on-site experience with a varsity athletic team.

358. *Techniques of Coaching: Women's Gymnastics.* 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised, on-site experience with a varsity athletic team.

359. *Techniques of Coaching: Track.* 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised, on-site experience with a varsity athletic team.

360. *Techniques of Coaching: Wrestling.* 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised, on-site experience with a varsity athletic team.

361. *Techniques of Coaching: Soccer.* 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised, on-site experience with a varsity athletic team.

362. *Techniques of Coaching: Basketball.* 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised, on-site experience with a varsity athletic team.

363. *Techniques of Coaching: Women's Basketball.* 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised, on-site experience with a varsity athletic team.

364. *Techniques of Coaching: Football.* 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised, on-site experience with a varsity athletic team.

365. *Techniques of Coaching: Baseball.* 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised, on-site experience with a varsity athletic team.

366. *Techniques of Coaching: Volleyball.* 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised, on-site experience with a varsity athletic team.

367. *Theories of Coaching Football.* 2 Hr. Designed to give students insights into the theories and practices involved in coaching football.

368. *Sport Movement Analysis.* 3 Hr. This course is designed to introduce a prospective coach to the principles of human movement.

397. *Research.* I, II, S. 1-15 Hr.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

Athletic Training (ATTR)

121. *Sport Injury Control and Management.* 3 Hr. Training, conditioning, protection, and other injury prevention measures. First aid, emergency service, and care related to physical education and athletics.

122. *Sports Injury Control and Management Lab.* 1 Hr. PR: Consent. Basic skills in athletic conditioning, application of taping and bracing, equipment fitting, record keeping, modality set-up, emergency procedures for athletic-related injuries, and the proper management of open wounds.

218. *Gross Anatomy Lab.* 1 Hr. Analysis of gross anatomy and systems of the trunk and extremities; cadaver laboratory experience.

219. *Gross Anatomy.* 3 Hr. Designed to provide an overview of body systems and gross anatomy of the trunk and extremities.

220. *Taping, Bracing, and Padding.* 2 Hr. PR: Consent. Practical application of adhesive tape, elastic wraps, and bracing techniques for prevention and protection of athletic injuries to support an athletes return to play.

221. *Advanced Athletic Training 1.* 3 Hr. PR: Consent. Designed to provide an in-depth analysis of life-threatening situations and internal injuries associated with athletics.

222. *Orthopedic Assessment 1.* 3 Hr. PR. Consent. Designed to provide in-depth analysis of athletic injury mechanisms to the lower extremity; injury recognition, injury evaluation techniques, and muscle isolation techniques.

281. *Athletic Training Practicum 1.* 2 Hr. PR: Consent. Structured methods of practical application and evaluation of clinical skills and academic knowledge of athletic training students and their progress through the athletic training program.

282. *Athletic Training Practicum 2.* 2 Hr. PR: Consent. Structured methods of practical application and evaluation of clinical skills and academic knowledge of athletic training students and their progress through the athletic training program.

293. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

301. *Athletic Training Practicum 3.* 2 Hr. PR: Junior standing and Consent. Structured methods of practical application and evaluation of clinical skills and academic knowledge of athletic training students and their progress through the athletic training program.

302. *Athletic Training Practicum 4.* 2 Hr. PR: Junior standing and Consent. Structured methods of practical application and evaluation of clinical skills and academic knowledge of athletic training students and their progress through the athletic training program.

321. *Therapeutic Modalities.* 3 Hr. PR: Consent. Designed to investigate tissue repair, physiology of hot and cold treatment, therapeutic modalities, and pharmacology relevant to athletic injury management.

323. *Athletic Injury Rehabilitation.* 3 Hr. PR: Consent. Designed for the practical applications of athletic training techniques.

325. *Organization and Administration.* 3 Hr. PR: Consent. Designed to analyze various issues and policies in athletic training relevant to training room administration, liability, drug testing, record keeping, and other selected topics.

327. *Biomechanics.* 3 Hr. PR: Consent. Designed to provide in-depth study of normal and abnormal biomechanics of the lower extremity and spine.

332. *Orthopedic Assessment 2.* 3 Hr. PR: Consent. Designed to provide in-depth analysis of athletic injury mechanics to the upper extremity; injury recognition, injury evaluation techniques, and muscle isolation techniques.

403. *Athletic Training Practicum 5.* 2 Hr. PR: Senior standing and Consent. Structured methods of practical application and evaluation of clinical skills and academic knowledge of athletic training students and their progress through the athletic training program.

404. *Athletic Training Practicum 6.* 2 Hr. PR: Senior standing and Consent. Structured methods of practical application and evaluation of clinical skills and academic knowledge of athletic training students and their progress through the athletic training program.

424. *Athletic Training Senior Seminar.* 3 Hr. PR: Consent. Practical application of athletic training techniques.

426. *Medical Aspects of Athletic Training.* 3 Hr. PR: Consent. Designed to provide students the exposure to a variety of medical concerns, illnesses, and conditions that may occur within the various clinical settings of athletic training.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Bibliography (BIBY)

490. *Teaching Practicum.* 1-3 Hr.

492. *Directed Study.* 1-6 Hr. Directed study, reading, and/or research.

493. *Special Topics.* 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

494. *Seminar.* 1-6 Hr. Seminars arranged for advanced graduate students.

495. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

Biochemistry (BIOC)

339. *Introduction to Biochemistry.* I. 3-5 Hr. PR: General chemistry, organic chemistry. (For medical technology, undergraduate biochemistry majors, and other students.) A general introduction to biochemistry with emphasis on human biochemistry. (4 hr. lec., 1 hr. lab.)

492. *Directed Study.* I, II, S. 1-6 Hr. (May be repeated for a maximum of 12 Hr.) PR: Consent.

493. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

497. *Research.* 1-6 Hr. Independent research projects.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Biology (BIOL)

101. *General Biology*. I, II, S. 3 Hr. Coreq: BIOL 103. Introductory course in biology: cellular, organismal, and population genetics, including reproduction, growth and development, and evolution.

102. *General Biology*. I, II, S. 3 Hr. Coreq: BIOL 104. Introductory biology: energetics and physiology of cells, organisms, and populations, including regulation and control of multicellular organisms.

103. *General Biology Laboratory*. I, II, S. 1 Hr. Coreq: BIOL 104. Experiments in biology: genetics and evolution; reproduction, growth, and development of cells, organisms, and populations.

104. *General Biology Laboratory*. I, II, S. 1 Hr. Coreq: BIOL 102. Experiments in biology: materials exchange, actions of enzymes, photosynthesis and respiration, and physiology of organisms.

105. *Environmental Biology*. I. 3 Hr. (Intended for non-biology majors.) Population growth and human impacts on the environment, including ecosystem destruction, biological diversity, pollution, and global climate change are explored to obtain the concepts necessary to understand complex environmental issues of our time.

106. *Environmental Biology Laboratory*. I. 1 Hr. Coreq: BIOL 105. Field and laboratory exercises explore fundamental ecological concepts and environmental problems, such as biodiversity, pollution, and natural resource utilization.

115. *Principles of Biology*. I. 4 Hr. An introductory course presenting basic principles of modern biology. This course represents the first in a four-course, integrated sequence required of biology majors. Topics include ecology and evolution, organismal biology, and cellular/molecular biology.

117. *Introductory Physiology*. II. 4 Hr. PR: BIOL 115 or BIOL 101, 102, 103, and 104. Continuation of BIOL 115. The diversity of reproductive, developmental, functional, and integrative mechanisms in plants and animals.

219. *The Living Cell*. I. 4 Hr. PR: (CHEM 115 or 117); and BIOL 117. Continuation of BIOL 117. Structure, function and diversity of cells with an emphasis on gene expression and cellular phenotype including cell chemistry, energetics, and regulation of cell activities.

221. *Ecology and Evolution*. II. 4 Hr. PR: BIOL 219. Continuation of BIOL 219. Basic concepts in evolution and ecology including Darwin's theory of natural selection, modern population genetics, speciation, population growth and regulation, demography, community ecology, ecosystem dynamics, and human ecology.

235. *Human Physiology*. I. 3 Hr. PR: BIOL 101 and BIOL 102 and BIOL 103 and BIOL 104. (Intended for non-biology majors.) An introductory course in the function of the human body.

293 A-Z. *Special Topics*. I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

301. *History of Biology*. II. 3 Hr. PR: (BIOL 101 and BIOL 103 and BIOL 102 and BIOL 104) or BIOL 115. History of development of biological knowledge with philosophical and social backgrounds.

302. *Biometry*. I. 3 Hr. PR: STAT 211. Application of quantitative methods and statistics to biological data with emphasis on hands-on hypothesis construction, experimental design, data analysis, and biological interpretation of statistical results.

310. *Advanced Cellular/Molecular Biology*. II. 3 Hr. PR: BIOL 219. Advanced study of fundamental cellular activities and their underlying molecular processes. Cellular structure and organization, protein structure and function, transcription, translation, and control of gene expression.

311. *Advanced Cellular/Molecular Biology-Laboratory*. II. 1 Hr. Coreq: BIOL 310. Experimental approaches to the study of cellular systems.

312. *Introduction to Virology*. I. 3 Hr. PR: BIOL 219. Survey of viruses, their modes of replication, their contribution to molecular biology, the significance of viral diseases in agriculture and medicine, and the contemporary use of viruses in biotechnology.

313. *Molecular Basis of Cellular Growth*. II. 3 Hr. PR: BIOL 219. Study of the integration of events as they regulate the growth and division of cells. Topics include hormones as cell effectors and the cancer cell as a model system.

314. *Molecular Genetics*. II. 4 Hr. PR: BIOL 115 and BIOL 117 and BIOL 219. Theoretical and practical knowledge in genetics as a field of study and tool for investigating biological problems are presented. The laboratory is a logical sequence of experiments providing actual research experience in molecular genetics.

315. *Developmental Biology*. II. 4 Hr. PR: BIOL 115 and BIOL 117 and BIOL 219. A molecular genetic analysis of the mechanisms by which multicellular organisms develop from single cells. With lab.

316. *Developmental Biology*. II. 3 Hr. PR: BIOL 115 and BIOL 117 and BIOL 219. A molecular genetic analysis of the mechanisms by which multicellular organisms develop from single cells.

336. *Vertebrate Embryology*. II. 4 Hr. PR: BIOL 115, 117, 219, and 221. An experimental and descriptive analysis of vertebrate development.

337. *Physiological Psychology.* I, II. 3 Hr. PR: 9 Hr. Psychology, behavior, physiology, or graduate standing. Introduction to physiological mechanisms and the neural basis of behavior. (Also listed as PSYC 426.)

338. *Behavioral Ecology.* II. 3 Hr. PR: BIOL 221. Consideration of the influences of environmental factors on short-and long-term regulation, control, and evolution of the behavior of animals.

339. *Aquaculture.* I. 3 Hr. PR: (BIOL 101 and BIOL 102 and BIOL 103 and BIOL 104) or BIOL 115. An introduction to the farming and husbandry of freshwater and marine organisms. Overnight field trips are voluntary.

340. *Invertebrate Zoology.* II. 4 Hr. PR: BIOL 219 and 221. The evolution of animals without vertebral columns. The laboratory includes field trips, including one that takes an entire weekend. (Dissection kit required.)

348. *Basic Neurobiology.* I. 3 Hr. PR: BIOL 115 and BIOL 117 and BIOL 219. This course provides an introduction to neuroscience. Basic neuroanatomy, neurophysiology, and the relationship between the central nervous system, physiology, and behavior will be covered. Neuroscientists from the medical center will provide guest lectures.

350. *Plant Physiology.* II. 4 Hr. PR: CHEM 115 and CHEM 116 and (BIOL 101 and BIOL 103) or BIOL 117. Physiochemical processes of plants. (Even years only.)

351. *Comparative Evolutionary Biology of Plants.* I. 4 Hr. PR: (BIOL 101 and BIOL 102 and BIOL 103 and BIOL 104) or (BIOL 115 and BIOL 117). Evolutionary history, morphology, life cycles, and ecology of extant and extinct groups, including: cyanobacteria, lichens, algae (green, red, and brown), bryophytes, ferns, fern allies, gymnosperms, and angiosperms. Laboratory emphasizes comparative analysis of living specimens. One of two field trips at student's expense.

352. *Anatomy and Development of Plants.* II. 4 Hr. PR: BIOL 117 or PLSC 206. A comparative study of vegetative and reproductive structures (cells, tissue, and organs) of bryophytes and vascular plants with emphasis on flowering plants. Laboratories focus on living plants and include observation of plant development from spores, seeds, and cuttings. One field trip.

353. *Flora of West Virginia.* S. 3 Hr. PR: BIOL 101 and BIOL 103 and BIOL 102 and BIOL 104 or BIOL 115. Identification of local woody and herbaceous seed plants, with emphasis on common native and introduced species. Conducted primarily through field trips to nearby areas with the use of dichotomous keys to determine the scientific names of observed specimens.

361. *Plant Ecology.* I. 4 Hr. PR: BIOL 221. Introduction to the four divisions of plant ecology, including physiological ecology, population ecology, community ecology, and ecosystem ecology.

362. *Limnology.* II. 4 Hr. PR: (BIOL 101 and BIOL 103) or BIOL 115 or WMAN 224 or Consent. Physical, chemical, and biological characteristics of inland waters with emphasis on the structure and function of stream ecosystems. (Also listed as WMAN 446.)

363. *Plant Geography.* I. 3 Hr. PR: BIOL 221. World-wide distribution patterns of plants and factors related to these distributions—including dispersal. Limiting factors, climate, isolation, evolutionary history, plate tectonics, pleistocene glaciations, and human activities. Plant communities and soils of polar, temperate, and tropical biomes are discussed.

386. *Undergraduate Research.* I, II. 1-4 Hr. PR: Written consent of chair and a 2.7 grade point average in biology. Individual laboratory or field experiments supervised by a faculty member.

410. *Cell and Molecular Biology Methods.* II. 3 Hr. PR: BIOL 219. Introduction to the theory and application of basic analytical tools used in molecular biology. Selected topics included are hydrodynamic methods, chromatography, electrophoresis, and general laboratory methods.

411. *Introduction to Recombinant DNA.* I. 4 Hr. PR: BIOL 219. An introductory course covering the basic principles and techniques of recombinant DNA technology, includes molecular cloning, isolation of plasmid DNA, agarose/acrylamide gel electrophoresis, restriction enzyme mapping, nucleic acid hybridization, and DNA sequencing.

412. *Cell Structure and Function.* 4 Hr. PR: BIOL 221. Students gain hands-on experience in methodologies used to study cell structure and function. Light and florescence microscopy are used to address cell signaling, signal transduction, exocytosis, apoptosis, and regulation of gene expression in reproductive endocrinology.

413. *Molecular Endocrinology.* II. 3 Hr. PR: BIOL 219. Hormonal action is discussed at the cellular and molecular levels. Topics include hormone production and regulation, receptor kinetics and activation, and receptor output.

414. *Molecular Endocrinology–Laboratory.* II. 1 Hr. Coreq: BIOL 413. Experimental techniques used to study hormones and receptors.

415. *Plant Development.* I. 4 Hr. PR: BIOL 115 and BIOL 117 and BIOL 219 and BIOL 221 and (organic chemistry or biochemistry.) Experimental studies of plant growth and development.

436. *General Animal Physiology.* I. 3 Hr. PR: BIOL 115 and BIOL 117 and BIOL 119 and BIOL 221. In-depth, current treatment of physiological principles which operate at various levels of biological organization in animals of diverse taxonomic relationships. Understanding is developed from background lectures and student analyses in discussion sessions of research literature.

437. *General Animal Physiology-Laboratory.* I. 1 Hr. Coreq: BIOL 436. After learning basic techniques, students are provided the opportunity to design, execute, and report upon an independent research project in physiology.

438. *Animal Behavior.* I. 4 Hr. PR: BIOL 221 and ((BIOL 101 and BIOL 102 and BIOL 103 and BIOL 104) or BIOL 115). Introduction to animal behavior (ethology) emphasizing the ecology and evolution of individual and social behaviors. Laboratory includes independent investigation of behavioral phenomena. Offered in even-numbered years.

439. *Neuroethology.* II. 3 Hr. PR: BIOL 117 and BIOL 219 and (BIOL 337 or BIOL 438). Explores the way behavior is controlled in a wide variety of animals so the similarities and differences in neural mechanisms can be better understood. (Offered in odd-numbered years.)

440. *Comparative Anatomy.* I, II. 4 Hr. PR: BIOL 115 and 117 and BIOL 219 and BIOL 221 or consent. A functional and evolutionary study of vertebrate structure. (Dissection kit required.)

441. *Vertebrate Microanatomy.* II. 5 Hr. PR: BIOL 115 BIOL 117 and BIOL 219 and BIOL 221. Structural and functional approach to the study of tissues and organs of vertebrates.

450. *Plant Systematics.* I. 4 Hr. PR: (BIOL 101 and BIOL 103 and BIOL 102 and BIOL 104) or BIOL 117. Study of the taxonomy of flowering plants worldwide and related topics in angiosperm classification and evolution. Laboratories emphasize characteristics of selected families of monocotyledons and dicotyledons using living and herbarium material.

461. *Principles of Evolution.* II. 3 Hr. PR: BIOL 221. Introduction to the study of evolution, including genetics of evolutionary change, speciation and adaptation molecular evolution, the history of life, extinction, co-evolution, and the origins of humans.

462. *Methods in Ecology and Biogeochemistry.* II. 3 Hr. PR: BIOL 221. Introduction to the theory and application of basic analytical tools used in ecology and biogeochemistry. Topics include sampling of terrestrial and aquatic organisms and their environment and the chemical analyses of biological material. (Offered in odd years.)

463. *Global Ecology.* I. 3 Hr. PR: BIOL 221. The Earth viewed as a changing biogeochemical system. Topics include the structure, composition, and dynamics of the ecosphere, nutrient cycles, changing atmospheric composition, climate change, ozone depletion, land-use change, biological invasions, and changes in biodiversity.

464. *Quantitative Genetics.* I. 3 Hr. PR: BIOL 221. Relationship of gene and genotype frequencies in populations of diploid organisms and the effects of mutation, selection, and non-random mating in relation to single gene pairs. Application of these concepts to multigenic inheritance of quantitative traits.

486. *Honors Investigation and Thesis.* I, II, S. 1-4 Hr. (May be repeated for credit; max. credit 12 hr.) PR: Second semester of junior year, recommendation of advisor, biology majors only. Permission required. Supervised readings, investigation, and study.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492. *Directed Study.* 1-6 Hr. PR: Consent. Directed study, reading, and/or research.

493 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Consent. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Biometric Systems (BIOM)

426. *Biometric Systems.* 3 Hr. PR: STAT 215 and MATH 261 and CS 111. This course presents an introduction to the principles of operation, design, testing, and implementation of biometric systems, and the legal, social, and ethical concerns associated with their use. Cross-listed with EE 426

480. *Senior Design Seminar.* 2 Hr. PR: ENGL 102, penultimate semester. Students will select group senior design projects. A complete system-level design will be presented in the form of written proposal and oral presentation of their plans to complete the project during the subsequent semester. (Equivalent to CPE 480, CS 480, and EE 480.)

481. *Senior Design Project.* 3 Hr. PR: BIOM 480; All required coursework. Detailed biometric system and application design experience, including choice of components, interfacing, troubleshooting, working in groups, and project management. Also covers professional topics, including ethics, liability, safety, socio-legal issues, risks, and employment agreements.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Broadcast News (BN)

191 A. *Special Topics.* 1-3 Hr.

215. *Introduction to Broadcasting.* 3 Hr. (Open to all University students.) Survey of the broadcasting industry with a particular emphasis on broadcast journalism, including historical development, federal regulation, industry codes, professional responsibilities, broadcasting research, and contemporary developments including cablevision, digital technology, and interactive television.

293. *Special Topics.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

319. *Broadcast News Writing.* 3 Hr. PR: Admission to School of Journalism. Gathering, researching, and evaluating facts; writing news for radio and television; ethical responsibilities of broadcast news reporters. (Lab fees will be assessed for this course.)

385. *Broadcast Journalism 1.* 3 Hr. PR: BN 319. Gathering, writing, editing, and presenting radio news; taping; monitoring local and network newscasts; emphasis on news writing and production. Lec./ Lab. (Lab fees assessed for this course.)

386. *Electronic Field Reporting.* 3 Hr. PR: BN 385. Field reports for television news using ENG videotape technology; topic selection, evaluation, research, and writing; visual and script development; ethical and legal considerations. (Lab fees will be assessed for this course.)

487. *Advanced Television Reporting and Producing.* 3 Hr. PR: BN 386. Reporting, writing, and editing television news stories and producing television newscasts; taping newscasts at the School of Journalism television studio. Work may be aired on local stations and/or closed-circuit television. (Lab fees will be assessed for this course.)

488. *Video Production.* 1 Hr. PR: BN 386. This course is designed to teach broadcast journalism students advanced production techniques for news productions, including field reports, newscasts, and other studio-based news programs. Students also learn about the principles and theories of news production.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant. (Graded Pass/Fail.)

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development. (Graded Pass/Fail.)

493 A-Z. *Special Topics.* I, II, S. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Business Administration (BUSA)

No credit is available for BUSA courses toward business or economics degrees. Course completion does not allow admission into other business courses without completion of other pre-business prerequisites. These courses, other than BUSA 101, should not be taken by pre-B and E students or any College of Business and Economics major.

101. *Introduction to Business.* 3 Hr. PR: Freshman only. An introduction to the contemporary business world including international and small business, quality, ethics, and career preparation. The role of accounting, economics, finance, management, and marketing activities are investigated.

310. *Survey of Business Law.* 3 Hr. PR: Junior standing. Overview of business law discipline. Topics include laws and the court system, employment and labor law, business forms and capitalization, business competition law, and business ethics.

320. *Survey of Management.* 3 Hr. PR: Junior standing. Overview of management discipline as a process involving planning, organizing, controlling, and directing. An integrated view of management including organizational behavior is emphasized.

330. *Survey of Marketing.* 3 Hr. PR: Junior standing. Overview of the marketing discipline. Topics include the management of the product, communication, price, and distribution variables as well as an introduction to buyer behavior and marketing research.

340. *Survey of Finance.* 3 Hr. PR: Junior standing. Overview of the finance discipline. Topics include financial statement analysis, risk, capital budgeting, investments, and security markets.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR. Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Business Core (BCOR)

310. *Professional Development 1.* 1 Hr. PR or CONC: BCOR 330. The development of skills necessary for the successful study of business, including effective teamwork skills, information search skills, presentation skills, stress management, and time management.

315. *Professional Development 2.* 1 Hr. PR: BCOR 310. The development of essential skills for professional placement, including resume writing, interviewing skills, and job search skills.

320. *Legal Environment of Business.* 3 Hr. Explores the relationship of law, government, and ethics to business enterprise. Provides overview of legal and ethical issues relevant to business decision-making and planning and the government regulations of business.

330. *Information Systems and Technology.* 3 Hr. PR: CS 101. Introduces essential information systems concepts for managing competitive firms in a global environment. Utilizes the Internet and builds skills in decision-making using spreadsheets, oral communication using presentation graphics, and data management using database software.

340. *Business Finance.* 3 Hr. PR: (ACCT 202 and ECON 202 and ECON 225 and ENGL 102) and (MATH 150 or MATH 155). Activities of the finance manager in the planning, acquisition, and administration of funds used in a business enterprise.

350. *Principles of Marketing.* 3 Hr. PR or CONC: BCOR 330 and BCOR 310 and BCOR 370. Overview of marketing and the interrelationships between marketing and other business disciplines. Topics include the management of the product, communication, price, and distribution variables as well as introduction to buyer behavior and marketing research.

360. *Operations and Quantative Business Methods.* 3 Hr. PR: BCOR 370 and BCOR 330. The course is designed to acquaint students with a variety of production and operations management concepts and techniques. Productivity, competitiveness, operations strategy, capacity, location, layout, inventory, forecasting, and supply chain management are key concepts to be covered.

370. *Managing Individuals and Teams.* 3 Hr. Topics include traditional management functions, employee motivation, leadership, team dynamics, individual and group decision-making, and individual differences. Additional topics include social responsibility and ethics, diversity, organizational structure and design, organizational control, and managing innovation and change.

410. *Professional Development 3.* 1 Hr. PR: BCOR 310 and BCOR 315. Transition to the workplace. Provides practical application skills for successful adjustment to the world of work. Topics include personal financial planning, career challenges, professional dress, etiquette, ethics, and sensitivity issues.

460. *Contemporary Business Strategy.* 3 Hr. PR: BCOR 320 and BCOR 330 and BCOR 310 and BCOR 315 and BCOR 370 and BCOR 410 and BCOR 350 and BCOR 360. Investigation of components of the business curriculum. Investigation and analysis of current business problems.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses. BCOR

Business Law (BLAW)

293. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

310. *Business Law for Managers.* 3 Hr. PR: BCOR 320 Survey of legal principles relevant to operation and management of business organizations, including the substantive law of agency and employment, business organizations, credit, and bankruptcy.

400. *Personnel Relations and the Law.* 3 Hr. PR: BCOR 320 or consent. The legal principles guiding employer-employee relations, including agency law and the law regulating employee health, safety, compensation, and benefits, job opportunity, and labor organizing.

420. *Law for the C.P.A.* 3 Hr. PR: BCOR 320. (Credit cannot be received for both BLAW 112 and BLAW 420.) A survey of those areas of commercial and regulatory law with which accountants need familiarity in order to exercise good judgement, practice their profession skillfully, and understand their professional responsibility.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hrs.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Chemical Engineering (CHE)

201. *Material and Energy Balances 1.* 3 Hr. PR: MATH 155 and CHEM 116 and PR or Conc: ENGR 102. Introduction to chemical engineering fundamentals and calculation procedures, industrial stoichiometry, real gases and vapor-liquid equilibrium, heat capacities and enthalpies; unsteady-state material balances and energy balances. (2 hr. lec., 2 hr. calc. lab.)

202. *Material and Energy Balances 2.* 3 Hr. PR: CHE 201 and PR or Conc: CHE 230. Continuation of CHE 201. (2 hr. lec., 2 hr. calc. lab.)

230. *Numerical Methods for ChE.* 3 Hr. PR: ENGR 102 and MATH 156 and PR or Conc: CHE 202 and MATH 251. Numerical solution of algebraic and differential equations with emphasis on process material and energy balances. Statistical methods optimization and numerical analysis. (2 hr. lec., 2 hr. calc. lab.)

293. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

310. *Process Fluid Mechanics.* 3 Hr. PR: MATH 251 and CHE 202. Fluid statics, laminar and turbulent flow, mechanical energy balance, Bernoulli equation, force balance, friction, flow in pipes, pumps, metering and transportation of fluids, flow through packed beds and fluidized beds. Laboratory demonstrations and experiments. (2 hr. lec., 2 hr. calc. lab.)

311. *Process Heat Transfer.* 3 Hr. PR: MATH 251 and CHE 202. Conductive heat transfer, convective heat transfer, design and selection of heat exchange equipment, evaporation, and radiation, applications, laboratory demonstrations, and experiments. (2 hr. lec., 2 hr. calc. lab.)

312. *Separation Processes.* 4 Hr. PR: CHE 310 and CHE 311 and CHE 320. Equilibrium stage and multiple stage operations, differential countercurrent contacting, membrane separations, fluid-particle separations. Laboratory demonstrations and experiments. (3 hr. lec., 2 hr. calc., lab.)

315. *CHE Transport Analysis.* 3 Hr. PR: CHE 310 and CHE 311 and CHE 320 and MATH 261. Development of fundamental relationships for momentum, heat and mass transfer for flow systems to include chemical reactions, interphase transport, and transient phenomena. Development and use of microscopic and macroscopic balance equations. (3 hr. lec.)

320. *Chemical Engineering Thermodynamics.* 3 Hr. PR: CHE 202 and MATH 251. First and second laws of thermodynamics. Thermodynamic functions for real materials. Physical equilibrium concepts and applications. (2 hr. lec., 2 hr. calc. lab.)

325. *Chemical Reaction Engineering.* 3 Hr. PR or Conc: CHE 312. Application of material balances, energy balances, chemical equilibrium relations, and chemical kinetic expressions to the design of chemical reactors. (3 hr. lec.)

326. *Reaction Phenomena.* 3 Hr. PR: CHE 320 and PR or CONC: CHE 325. Theory and application of reaction kinetics, analysis of rate data, reaction equilibrium, and catalysis. The application of these phenomena to industrial relevant systems will be emphasized. (3 hr. lec.)

366. *Materials Science.* 3 Hr. PR: CHEM 116 and Junior standing in Engineering and Mineral Resources or Chemistry. Chemical bonding and structures of metals, ceramics, and organic materials; the dependence of properties upon these structures and bonding conditions; thermal and mechanical stresses; corrosion; synthesis and preparation of materials. (3 hr. lec.)

412. *Particle Processing.* 4 Hr. PR: CHEM 342 or CHEM 346 or CHE 320 or MAE 320 or MAE 321. Processes of particle processing such as size separation, size reduction, dewatering and concentration; flotation of oxide and sulfide minerals. Plant practice for the processing of minerals will be covered by example. (3 hr. lec., 3 hr. lab.)

413. *Extractive Processing.* 4 Hr. PR: CHEM 342 or CHEM 346 or CHE 320 or MAE 320 or MAE 321. Topics include the basic mechanisms of unit processes of leaching, solvent extraction, and electrowinning; roasting, smelting, and refining. (3 hr. lec., 3 hr. lab.)

414. *Coal Conversion Engineering.* 3 Hr. PR: CHEM 233; and PR or CONC: CHE 312, and CHE 325. Coal conversion processes from the unit-operations approach; thermodynamics, kinetics, and evaluation of system requirements and performance. (3 hr. lec.)

435. *Chemical Process Control.* 3 Hr. PR: CHE 312 and CHE 325. Transient behavior of chemical process flow systems, linearization and stability. Process control system design including frequency response analysis. Instrumentation and hardware. (3 hr. lec.)

441. *Interfacial Phenomena.* 3 Hr. PR: CHE 315 and CHEM 346 or consent. Processes occurring at fluid/fluid and fluid/solid interfaces. Interfacial tension, contact angle, wetting, transport phenomena near interfaces, properties and stability of colloids, colloid transport phenomena, surfactants, micelles, and emulsions. (3 hr. lec.)

450. *Unit Operations Laboratory 1.* 2 Hr. PR. CHE 312 and CHE 325. Operation of chemical process engineering equipment; collection, analysis, and evaluation of laboratory report preparation. (4 hr. lab.)

451. *Unit Operations Laboratory 2.* 2 Hr. PR: CHE 450. Continuation of CHE 450. (4 hr. lab.)

455. *Chemical Process Design 1.* 4 Hr. PR: CHE 312 and CHE 325. Analysis, synthesis, and design of chemical process systems. Engineering economics, safety, professional aspects of the practice of chemical engineering. Includes a group chemical plant design project, as well as individual design projects. (3 hr. lec., 4 hr. des. lab.)

456. *Chemical Process Design 2.* 3 Hr. PR: CHE 455. Continuation of CHE 455. (4 hr. des. lab.)

461. *Polymer Science and Engineering.* 3 Hr. PR: CHEM 233 and PR or Conc: CHE 315. Polymer classification, polymer synthesis, molecular weights and experimental techniques, thermodynamics, rubber elasticity, mechanical behavior, crystallization, diffusion, rheology, extrusion, and injection molding. (3 hr. lec.)

462. *Polymer Processing.* 3 Hr. PR: Junior standing in Engineering and Mineral Resources. Flow behavior in idealized situations; extrusion; calendering; coating; injection molding; fiber spinning; film blowing; mixing; heat and mass transfer; Flow instabilities. (3 hr. lec.)

463. *Polymer Composites Processing.* 3 Hr. PR: Junior standing in Engineering and Mineral Resources. Advantages and applications of polymer composites; Chemistry and kinetics of thermosetting polymers; Hand lay up and spray up; compression molding; resin transfer molding; reaction injection molding; filament winding; pultrusion. (3 hr. lec.)

466. *Electronic Materials Processing.* 3 Hr. PR: Junior standing in Engineering and Mineral Resources. The design and application of thermal, plasma, and ion assisted processing methodologies; solid state, gas phase, surface, and plasma chemistry underpinnings; thin film nucleation and growth; the effect of processing methods and conditions on mechanical, electrical, and optical properties. (3 hr. lec.)

471. *Biochemical Engineering.* 3 Hr. PR: CHE 325 or consent. Kinetics of enzymatic and microbial reactions, interactions between biochemical reactions and transport phenomena, analysis and design of bioreactors, enzyme technology, cell cultures, bioprocess engineering. (3 hr. lec.)

472. *Biochemical Separations.* 3 Hr. PR or Conc: CHE 312 or consent. Modeling and design of separation processes applicable to recovery of biological products. Topics include filtration, centrifugation, extraction, adsorption, chromatography, electrophoresis, membranes, crystallization, examples from industry. (3 hr. lec.)

475. *Chemical Process Safety.* 3 Hr. PR: CHE 202 or consent. Introduction to safety, health, and loss prevention in the chemical process industry; regulations, toxicology, hazard identification, system safety analysis, and safety design techniques. (3 hr. lec.)

476. *Pollution Prevention.* 3 Hr. PR or CONC: CHE 312 and CHE 325 and CHE 326. Environmental risk and regulations; fate and persistence of chemicals; green chemistry; evaluation and improvement of pollution performance during chemical process design; life cycle analysis; industrial ecology. (3 hr. lec.)

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491 A-Z. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in the Honors Program and consent by the Honors director. Independent reading, study, or research.

Chemistry (CHEM)

110. *Introduction to Chemistry.* I, II. 2 Hr. Required for students whose performance on a departmental placement examination indicates need for introductory work before enrolling in other chemistry courses. Scientific terminology and concepts; chemical arithmetics; chemical symbols, formulae and equations; mole concepts; problem solving. May not count for credit toward graduation if taken after credit for another course in chemistry has been established. (1 hr. lec., 1 hr. rec.)

111. *Survey of Chemistry.* I. 4 Hr. Designed primarily for students taking only one year of college chemistry. Atomic structure; chemical bonding; acids, bases, and salts; periodicity; properties of gases, liquids, and solids; stoichiometry; oxidation-reduction. (3 hr. lec., 3 hr. lab.) (Students may not receive credit for CHEM 115 or CHEM 117 and for CHEM 111.) (CHEM 111 and CHEM 112 cannot be used as pre-requisite courses for organic chemistry; students anticipating the possibility or likelihood of taking organic chemistry must have credit for CHEM 115 and CHEM 116 or for CHEM 117 and CHEM 118.)

112. *Survey of Chemistry.* II. 4 Hr. PR: CHEM 111. Continuation of CHEM 111. Nuclear chemistry; air and water pollution; useful natural materials; consumer chemistry; introduction to organic and biochemistry. (3 hr. lec., 3 hr. lab.) (Students may not receive credit for CHEM 116 or CHEM 118 and for CHEM 112.) (CHEM 111 and CHEM 112 cannot be used as pre-requisite courses for organic chemistry). Students anticipating the possibility or likelihood of taking organic chemistry must have credit for (CHEM 115 and CHEM 116) and (CHEM 117 and CHEM 118).

115. *Fundamentals of Chemistry.* I, II. 4 Hr. PR: CHEM 110 or satisfactory performance on departmental examination. For students who need more than one year of college chemistry and quantitative relationships on which subsequent chemistry courses are built. (3 hr. lec., 3 hr. lab.) (Students may not receive credit for CHEM 117 and for CHEM 115.)

116. *Fundamentals of Chemistry.* I, II. 4 Hr. PR: CHEM 115. Continuation of CHEM 115. (3 hr. lec., 3 hr. lab.) (Students may not receive credit for CHEM 118 and for CHEM 112 or CHEM 116.)

117. *Principles of Chemistry.* I. 5 Hr. PR: High school chemistry and satisfactory performance on departmental placement examination, or CHEM 110. A more advanced treatment of the principles and theories of chemistry than offered in CHEM 115 and CHEM 116. Primarily for students specializing in chemistry. (3 hr. lec., two 3-hr. lab.) (Students may not receive credit for CHEM 117 and for CHEM 111 or CHEM 115.)

118. *Principles of Chemistry.* II. 5 Hr. PR: CHEM 117. Continuation of CHEM 117. (3 hr. lec., two 3-hr. lab.) (Students may not receive credit for CHEM 118 and for CHEM 112, CHEM 116 or CHEM 215.)

215. *Introductory Analytical Chemistry.* I. 4 Hr. PR: CHEM 116. Volumetric analysis, gravimetric analysis, solution equilibria, spectrophotometry, separations, and electrochemical methods of analysis. (2 hr. lec., two 3 hr. lab.) (Students may not receive credit for CHEM 215 and for CHEM 117 and CHEM 118.)

231. *Organic Chemistry: Brief Course.* II. 4 Hr. PR: CHEM 116. Emphasis on biological applications for students in medical technology, agriculture, and family resources. Nomenclature, structure, reactivity, and stereochemistry are stressed. (3 hr. lec., 3 hr. lab.) (Students may not receive credit for CHEM 231 and for CHEM 233 and CHEM 234.)

233. *Organic Chemistry.* I, II. 3 Hr. PR: CHEM 116 or CHEM 118; and PR or CONC: CHEM 235. Basic principles of organic chemistry. Modern structural concepts, the effect of structure on physical and chemical properties, reactions and their mechanisms and application to syntheses. (3 hr. lec.) (Students may not receive credit for CHEM 233, CHEM 234, and for CHEM 231.)

234. *Organic Chemistry.* I, II. 3 Hr. PR: CHEM 233 and CHEM 235 and PR or CONC: CHEM 236. Continuation of CHEM 233. (3 hr. lec.)

235. *Organic Chemistry Laboratory.* I, II. 1 Hr. PR or CONC: CHEM 233. Fundamental organic reactions and the preparation of organic compounds. (3 hr. lab.)

236. *Organic Chemistry Laboratory.* I, II. 1 Hr. PR: CHEM 233 and CHEM 235 and PR or CONC: CHEM 234. Continuation of CHEM 235. (3 hr. lab.)

293 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

310. *Instrumental Analysis.* II. 3 Hr. PR: CHEM 215 and physical chemistry. Lectures and demonstrations. Fundamentals of instrumental methods applied to chemical analyses: electrochemistry, spectroscopy, mass spectrometry, and chromatography. (3 hr. lec.)

312. *Environmental Chemistry.* II. 3 Hr. PR: CHEM 215 and CHEM 234 and physical chemistry. Study of the nature, reactions, transport, and fates of chemical species in the environment. (3 hr. lec.)

313. *Instrumental Analysis Laboratory.* I. 1 Hr. PR: CHEM 310. Practical application of modern instrumental methods to problems in chemical analysis. (3 hr. lab.)

335. *Methods of Structure Determination.* I. 4 Hr. PR: CHEM 234 and CHEM 236. Use of chemical methods and UV, IR, NMR, and mass spectroscopy to elucidate structures of organic compounds. For students in chemistry and related fields who may need these methods in research and applied science. (2 hr. lec., two 3-hr. lab.)

337. *Polymer Chemistry.* I. 3 Hr. PR: CHEM 234 and physical chemistry. Methods, mechanisms, and underlying theory of polymerization. Structure and stereochemistry of polymers in relation to chemical, physical, and mechanical properties. (3 hr. lec.)

339. *Organic Syntheses.* II. 3 Hr. PR: CHEM 234 and CHEM 236. Modern synthetic methods of organic chemistry. (1 hr. lec., two 3-hr. lab.)

341. *Physical Chemistry: Brief Course.* II. 3 Hr. PR: A grade of C or better in CHEM 116 (CHEM 215 if CHEM major.) MATH 156, and PHYS 102 or 112. Beginning physical chemistry covering the subjects of chemical thermodynamics, chemical dynamics, and the structure of matter. (3 hr. lec.). (Students may not receive credit for CHEM 346 and 348 and for CHEM 341.)

342. *Experimental Physical Chemistry.* I, II. 1 Hr. PR: CHEM 341 or CHEM 346) and CHEM 215 and (or CHEM 231 or CHEM 235. Laboratory work in physical chemistry designed to accompany CHEM 341. (One 3-hr. lab.)

346. *Physical Chemistry.* I. 3 Hr. PR: CHEM 234, MATH 156, and PHYS 112. A first course in physical chemistry. Topics include a study of thermodynamics and chemical equilibria. (3 hr. lec.). (Students may not receive credit for CHEM 346 and for CHEM 341.)

347. *Physical Chemistry Laboratory.* II. 1 Hr. PR: (CHEM 118 or CHEM 215) and CHEM 346. Experimentation illustrating the principles of physical chemistry and offering experience with chemical instrumentation. (One 3-hr. lab.)

348. *Physical Chemistry.* II. 3 Hr. PR: CHEM 346 and MATH 251. Continuation of CHEM 346. Chemical dynamics and the structure of matter. (3 hr. lec.). (Students may not receive credit for CHEM 348 and for CHEM 341.)

349. *Physical Chemistry Laboratory.* I. 2 Hr. PR: CHEM 346 and CHEM 347 and CHEM 348. Continuation of CHEM 347. (Two-3 hr. lab.)

401. *Chemical Literature.* I. 1 Hr. PR: CHEM 234 and CHEM (341 or 346). Study of techniques for locating, utilizing, and compiling information needed by the research worker in chemistry. (1 hr. lec.)

403. *Undergraduate Seminar.* II. 1 Hr. PR: CHEM 401. For B.S. chemistry majors, B.A. chemistry majors by consent. Instruction in design and presentation of topics of current chemical interest. (1 hr. individual instruction and/or lecture.)

411. *Intermediate Analytical Chemistry.* I. 3 Hr. PR: CHEM 215 and physical chemistry. Concepts underlying modern analytical procedures and their application to the solution of contemporary problems; presented at the intermediate level. (3 hr. lec.)

414. *Computer Methods in Analytical Chemistry.* 1 Hr. PR: CHEM 310; and PR or Conc: CHEM 313. Instruction in the use of data acquisition and data processing systems in the analytical chemistry lab. (3 hr. lab.)

422. *Intermediate Inorganic Chemistry.* I. 3 Hr. PR: Physical chemistry. Structure, bonding, and reactivity of compounds of main-group and transition metal elements. Molecular structure and symmetry, solid state chemistry, ligand field theory, and coordination chemistry. (3 hr. lec.)

423. *Inorganic Synthesis Laboratory.* II. 2 Hr. PR: CHEM 422. Application of modern synthetic and spectroscopic methods of analysis to the preparation and characterization of main group, solid-state, transition metal, and organometallic compounds. (Two 3-hr. lab.)

441. *Chemical Crystallography.* II. 3 Hr. PR or Conc.: Physical chemistry or consent. Applications of X-ray diffraction of crystals to the study of crystal and molecular structure. Includes theories of diffraction and crystallographic methods of analysis. (3 hr. lec.)

444. *Colloid and Surface Chemistry.* II. 3 Hr. PR: Physical chemistry. Selected topics in the properties and physical chemistry of systems involving macromolecules, lyophobic colloids, and surfaces. (3 hr. lec.)

450. *Bonding and Molecular Structure.* I. 3 Hr. PR: CHEM 348. Introduction to the quantum theory of chemical bonding. Atomic structure, theoretical spectroscopy, predictions of molecular structures, and bond properties. (3 hr. lec.)

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492. *Directed Study.* I, II. 1-6 Hr. PR: Consent. Directed study, reading, and/or research.

493 A-Z. *Special Topics.* I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

497. *Research.* I, II. 1-6 Hr. PR: Consent. Independent research projects.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Child Development and Family Studies (CDFS)

110. *Families Across the Life-Span.* I, II. 3 Hr. Explores the physical, psychological, and cognitive developmental changes of individuals who are functioning in family systems that change across the life-span.

111. *Child Development Observation Lab.* 1 Hr. PR: CDFS 110.

112. *Introduction to Marriage and Family.* I, II. 3 Hr. Explores various dimensions of self-development and personal preference relevant to dating, mate selection, marriage, having children, parenting, divorce, and remarriage.

210. *Introduction to Parenting.* I, II. 3 Hr. Introduction of terminology, descriptions, and explanations of the parental role and parent-child interactions. Emphasis on social and personal definitions of the parental role and on the problems and changes in parent-child relationships.

211. *Infant Development.* I. 3 Hr. PR: CDFS 110. Developmental characteristics and environmental effects on the child during the prenatal period and the first two years with implications for guidance and care, includes practical experience working with children.

212. *Early Childhood Development.* I, II, S. 3 Hr. PR: CDFS 110. Physical, social, emotional, and cognitive development of children from conception to seven years with implications for guidance and care in practical settings.

316. *Child Development Practicum.* I, II. 3-4 Hr. PR: CDFS 212 or PSYC 241. Application of child development principles. Involves planning developmentally appropriate activities for three, four, and five-year-old children at the West Virginia University Child Development Laboratory.

317. *Hospital Child Life Practicum.* I, II. 3 Hr. PR: CDFS 212 and CDFS 316. Application of development principles to children in the hospital. Assignments involve learning intervention techniques to minimize hospital-generated stress and enhance normal development and family experience.

320. *Family Life Education.* I. 3 Hr. Introduces the general philosophy and broad principles of family life education along with the range of programs available. An opportunity is given to plan, implement, and evaluate such educational programs for diverse audiences.

321. *Family Policy and Law.* II. 3 Hr. Explores at the federal and state level the process of policy formation, implementation, and evaluation as it relates to family life. Introduces the laws regulating such family life activities as marriage, parenting, and divorce.

391 A. *Advanced Topics.* 1-6 Hr.

412. *Adolescent Development.* II. 3 Hr. PR: Senior or graduate standing and CDFS 110. The adolescent in contemporary American culture, including normative physical, social, and personality development; relationships within various typical social settings. (e.g., family, school, community, peer group.)

413. *Contemporary Issues in Family Relations.* II. 3 Hr. PR: Senior or Graduate standing or Consent. Study of recent research findings in the major areas of family relationships. Topics include effects of family violence, substance abuse, poverty, and health.

415. *Family Interaction and Communication.* II. 3 Hr. PR: Senior or Graduate standing or Consent. The family as a social group; processes related to well-being for a variety of family relationships.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Chinese (CHIN)

101. *Elementary Chinese 1.* 3 Hr.

102. *Elementary Chinese 2.* 3 Hr. Continuation of CHIN 101.

203. *Intermediate Chinese 1.* 3 Hr. PR: CHIN 102 or equiv.

204. *Intermediate Chinese 2.* 3 Hr. PR: CHIN 203 or equiv.

293. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Civil Engineering (CE)

200. *Land Surveying.* 3 Hr. PR: MATH 128. An introduction to the current surveying methods and equipment as applied to mapping projects and simple construction layout. Leveling, angles and directions, distance measurements, and fundamental traverse calculations along with mapping principles are emphasized. (Two 75-minute periods.)

205. *Surveying and Computer-Aided Design.* 4 Hr. PR: Sophomore standing. Theory and practice of surveying measurements and calculations for engineering works; coordinate geometry and computer-aided design applications for civil engineering facilities. (3 hr. lec., 3 hr. lab.)

293. *Special Topics.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

310. *Civil Engineering Materials.* 4 Hr. PR: MAE 243 or Consent. Physical, chemical, and molecular properties of materials commonly employed in civil engineering works. Influence of these properties on the performance and use of materials. Emphasis on laboratory evaluation of properties that control the performance of materials. (3 hr. lec., 3 hr. lab.)

321. *Fluid Mechanics for Civil Engineers.* 3 Hr. PR: MATH 261 and MAE 242. Fluid properties, statics, and kinematics; conservation laws for mass, momentum, and mechanical energy; piezometric head and grade lines; dimensional analysis and similitude; weir and orifice flow; introduction to flow in pipes and open channels. (3 hr. lec.)

322. *Hydrotechnical Engineering.* 4 Hr. PR: CE 205 and CE 321 and ENGR 102. Flow in pipes and pipe networks; pumps; design of water distribution systems; uniform and gradually varied flow; application to the design of sanitary sewer systems; physical and design laboratory exercises. (3 hr. lec., 3 hr. lab.)

332. *Introduction to Transportation Engineering.* 4 Hr. PR: CE 205. Integrated transportation systems from the standpoint of assembly, haul, and distribution means. Analysis of transport equipment and traveled way. Power requirements, speed, stopping, capacity, economics, route location. Future technological developments and innovations. (3 hr. lec., 3 hr. lab.).

347. *Environmental Engineering.* 3 Hr. PR: Junior standing. Introduction to environmental engineering as applied to water quality, water quality modeling, and water and wastewater treatment. (3 hr. lec.)

351. *Introductory Soil Mechanics.* 3 Hr. PR: CE 310. Introduction to geotechnical engineering, origin and formation of soils, fundamental soil properties, classification of soils, compressibility and consolidation, shear strength, lateral earth pressures. (2 hr. lec., 3 hr. lab.)

361. *Structural Analysis 1.* 4 Hr. PR: MAE 243 or Consent. Stability, determinacy, and equilibrium of structures; shear and bending moment diagrams of determinate and indeterminate beams and frames; analysis of trusses; displacement of planar structures by geometric and energy methods. (3 hr. lec., 3 hr. lab.)

405. *Principles of Boundary Surveying.* 3 Hr. PR: CE 205 or Consent. A study of the retacement requirements for a metes and bounds survey system. The study will include interpretation and writing of the property descriptions, legal principles related to boundary establishment, and analytical approaches to boundary location. (3 hr. lec.)

412. *Concrete and Aggregates.* 3 Hr. PR: CE 310 or Consent. Considerations and methods for the design of concrete mixes. Properties of portland cement and aggregates and their influence on the design and performance of concrete mixtures. Testing of concrete and aggregate and the significance of these tests. (2 hr. lec., 3 hr. lab.)

413. *Construction Methods.* 3 Hr. PR: Senior standing in civil engineering. Study of construction methods, equipment, and administration with particular emphasis on the influence of new developments in technology. (3 hr. lec.)

420. *Computational Fluid Mechanics.* 3 Hr. PR: CE 321 and ENGR 102 or Consent. Use of the computer in elementary hydraulics, open channel flow, potential flow, and boundary layer flow, numerical techniques for solution of algebraic equations, ordinary differential equations, and partial differential equations. (3 hr. lec.)

425. *Engineering Hydrology.* 3 Hr. PR: CE 321 or Consent. Scientific basis of the hydrologic cycle and its engineering implications; rainfall-runoff processes, hydrographs, flood routing, and statistical methods. (3 hr. lec.)

427. *Water Resources Engineering.* 3 Hr. PR: CE 425. Application of hydrologic and hydraulic principles in the design and analysis of water resource systems; probability concepts and economics in water resource planning, water law, reservoir operations, hydraulic structures, flood damage mitigation, hydroelectric power, and drainage. (3 hr. lec.)

431. *Highway Engineering.* 3 Hr. PR: CE 332 and CE 351. Highway administration, economics and finance; planning and design; subgrade soils and drainage; construction and maintenance. Design of a highway. Center line and grade line projections, earthwork and cost estimates. (2 hr. lec., 3 hr. lab.)

433. *Urban Transportation Planning and Design.* 3 Hr. PR: CE 332 or Consent. Principles of planning and physical design of transportation systems for different parts of the urban area. Land use, social, economic, and environmental compatibilities emphasized. Evaluation and impact assessment/assessment. (3 hr. lec.)

435. *Railway Engineering.* 3 Hr. PR: CE 205. Development and importance of the railroad industry. Location, construction, operation, and maintenance. (3 hr. lec.)

441. *Public Health Engineering.* 3 Hr. PR: Consent. Engineering aspects involved in control of the environment for protection of health and promotion of comfort of humans. Communicable disease control, milk and food sanitation, air pollution, refuse disposal, industrial hygiene, and radiological health hazards. (3 hr. lec.)

443. *Environmental Science and Technology.* 3 Hr. PR: Engineering major. Issues of global atmospheric change, minimization and control of hazardous wastes, groundwater contamination, water pollution, air pollution, solid waste control, and management of water and energy resources. (3 hr. lec.)

445. *Properties of Air Pollutants.* 3 Hr. PR: Consent. Physical, chemical, and biological behavioral properties of dusts, droplets, and gases in the atmosphere. Air pollutant sampling and analysis. Planning and operating air pollution surveys. (2 hr. lec., 3 hr. lab.)

447. *Environmental Engineering Design.* I. 3 Hr. PR: CE 347. Process design of treatment/remediation systems; comparison of alternatives and preliminary cost evaluation. (2 hr. lec., 3 hr. lab.)

451. *Foundation Engineering.* 3 Hr. PR: CE 351. Subsurface investigations and synthesis of soil parameters for geotechnical design and analysis, concepts of shallow and deep foundation design, geotechnical design of conventional retaining walls, computerized analysis and design of soil/foundation interaction; case histories. (3 hr. lec.)

453. *Earthwork Design.* 3 Hr. PR: CE 351. Use of soil mechanics principles in the analysis, design, and construction of earth structures. Principles of compaction and compaction control; an introduction to slope stability analysis and landslides; earth reinforcement systems, and ground improvement techniques. (3 hr. lec.)

454. *Geotechnical Engineering Field Methods.* 3 Hr. PR: CE 351. Soil exploration and groundwater sampling; in-situ determination of properties using split spoon, cone, dilatometer, pressuremeter, and vane equipment. Instrumentation for monitoring field performance and challenges associated with exploration and monitoring in geotechnical/geoenvironmental engineering. (3 hr. lec.)

461. *Structural Analysis 2.* 3 Hr. PR: CE 361 or Consent. Fundamental theory of statically indeterminate structures; analysis of indeterminate beams, frames, and trusses by stiffness and flexibility methods; study of influence lines for beams, frames, and trusses. (3 hr. lec.)

462. *Reinforced Concrete Design.* 3 Hr. PR: CE 310 and CE 361. Behavior and design of reinforced concrete members. Material properties; design methods and safety consideration; flexure; shear; bond and anchorage; combined flexure and axial load; footings; introduction to torsion slender columns, and prestressed concrete. (2 hr. lec., 3 hr. lab.)

463. *Steel Design.* 3 Hr. PR: CE 310 and CE 361. Design of steel bridge and building systems with emphasis on connections, beams, columns, plastic design, and cost estimates. (3 hr. lec.)

464. *Timber Design.* 3 Hr. PR: CE 310 and CE 361. Fundamentals of modern timber design and analysis. Topics include wood properties, design of beams, columns, trusses, and pole structures using dimension lumber, glue-laminated products, and plywood. (3 hr. lec.)

465. *Conceptual Design of Structures.* 3 Hr. PR: CE 361 or Consent. Classification, function, and conceptual analytical understanding of structural systems and components; design codes and modeling of loads; behavior of components and systems; design principles of structural systems. (3 hr. lec.)

466. *Transportation Systems Rehabilitation and Maintenance.* 3 Hr. Introduction to rehabilitation and maintenance of transportation infrastructure; definitions, issues and problems; environmental impact, pavement and bridge maintenance and rehabilitation methods with special consideration of stability, scour, and subsidence. (3 hr. lec.)

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 hr. Faculty supervised study of topics not available through regular course offerings sanitary problems.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Classics (CLAS)

101. *Elementary Latin 1.* 3 Hr.

102. *Elementary Latin 2.* 3 Hr. PR: CLAS 101. Continuation of CLAS 101.

203. *Intermediate Latin.* 3 Hr. PR: CLAS 102 or two years of high school Latin.

204. *Intermediate Latin 2.* 3 Hr. PR: CLAS 203 or two years of high school latin.

231. *Greek and Roman Civilization and Culture.* 3 Hr.

232. *Greek and Roman Myths.* 3 Hr.

293 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Expenence.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492. *Directed Study.* 1-6 Hr. Directed study, reading, and/or research.

493. *Special Topics.* 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

495. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Communication Studies (COMM)

100. *Principles of Human Communication.* I, II. 1 Hr. Introduction to the human communication process with emphasis on the principles, variables, and social contexts of communication.

102. *Human Communication in the Interpersonal Context.* I, II. 2 Hr. Introduction to interpersonal communication with emphasis upon application of one- to-one communication in a variety of social contexts.

103. *Presentational Speaking.* I, II. 1-3 Hr. A laboratory designed to reinforce behavioral speaking skills based on the theory taught in COMM 104.

104. *Human Communication in the Public Communication Context.* I, II. 2 Hr. Introduction to principles of communication in the one-to-many context.

105. *Introduction to the Mass Media.* I, II. 3 Hr. Critical examination of mass media with special emphasis on ways in which social, economic, and psychological factors influence the structure, functions, and effects of the media.

112. *Human Communication in the Small Group.* I, II. 3 Hr. Introduction to small-group communication with emphasis on developing understanding of the small group communication process and learning how to communicate effectively with working in a small group.

122. *Human Communication in Contemporary Society.* 3 Hr. I, II, S. This course addresses various social issues faced by young adults in our society and how communication is often part of the problem and how it can be used to solve these problems.

200. *Communication Theory and Research 1.* I, II. 3 Hr. PR: Pre-communication studies major. Methods of understanding human communication behavior, issues relating to epistemology and ontology in communication studies; and reviews/critiques of the major approaches and theories of human communication.

201. *Communication Theory and Research 2.* I, II. 3 Hr. PR: Pre-communication studies majors and a C or better in COMM 200. Emphasis on social science research; the language research, types of research, sampling, design, measurement, observation, and ethics from a communication perspective.

202. *Interpersonal Communication.* I, II. 3 Hr. PR: COMM 102. Survey of theoretical and research literature in interpersonal communication. Emphasis on interaction, interpersonal understanding, personal relationships, and self understanding as outcomes in interpersonal communication.

212. *Gender and Communication.* 3 Hr. PR: COMM 102 or consent. The similarities and differences of communication variables for males and females. Theoretical implications in the study of the gender variable with practical applications in different contexts.

293 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

303. *Business and Professional Communication.* 3 Hr. PR: COMM 306. Application of the theories of effective communication in organizations. Simulated projects and oral presentations will be used to refine communication skills necessary for entry-level positions within business and industry.

304. *Human Communication and Rational Decisions.* 3 Hr. Argumentation, small group, and persuasion, to the process and outcome of rational decision making in communication. Some emphasis on critical-rational response to manipulative communication.

305. *Appreciation of the Motion Picture.* 3 Hr. Evaluation of motion picture and television film as forms of mediated communication and as art forms involving communication and aesthetic principles. Emphasis on the feature-length theatrical fiction film.

306. *Human Communication in Organizations and Institutions.* 3 Hr. Communication processes and problems in business and nonbusiness organizations and institutions with attention to practical application. This course is not open to freshmen.

307. *Life-Span Communication.* 3 Hr. Development of communication from birth through adulthood to later years; study of media, interpersonal relationships, and competence in communication. This course is not open to freshmen.

308. *Nonverbal Communication.* I, II. 3 Hr. An examination of the effects of human nonverbal behavior on human communication. Emphasis on specific nonverbal behaviors including touch, time, environmental contexts, physical appearance cues, and social communication cues. This course is not open to freshmen.

309. *Health Communication.* 3 Hr. This course examines the vital role that communication plays in the American health care system and introduces concepts and approaches needed to effectively and ethically communicate about health in a pluralistic and multicultural society. This course is not open to freshmen.

314. *Nonviolence in Communication Behavior.* 3 Hr. Nonviolent resistance as communication behavior. Emphasis on major proponents of and upon learning ways to apply nonviolence in communication behavior.

316. *Intercultural Communication.* 3 Hr. PR: COMM 100 and COMM 102, or COMM 104. Examines similarities and differences between cultures with regard to norms, values, and practices in verbal and nonverbal communication. Emphasis on communication in Latin America, Asian, African, and Middle Eastern cultures. This course is not open to freshmen.

317. *Communication and Aging.* 3 Hr. Examining the influence of aging on communication, concentrating on persons over age 55. Social, psychological, biological, and sensory communication adjustments. Multidisciplinary approach to aging theories.

400. *Principles of Communication Education.* 3 Hr. Literature, principles, and current practices of communication education in public schools with directed application. Intended for teachers in communication and language arts.

401. *Communication Research Methods.* I. 3 Hr. PR: Communication studies major or consent and COMM 201. Research methods in human communication and related professional areas with emphasis on understanding and evaluating research procedures. Special focus on practical application.

403. *Capstone Seminar.* 3 Hr. PR: Senior status and completion of 24 hours of communication studies coursework or consent. Part one in a two-part sequence aimed at the appraisal and synthesis of communication knowledge and skills. It also prepares students to complete an in-depth applied project related to communication studies.

404. *Persuasion.* I, II. 3 Hr. Theory and research in persuasion, emphasizing a critical understanding and working knowledge of the effects of social communication on attitudes, beliefs, and behavior. This course is not open to freshmen.

405. *Effects of Mediated Communication.* 3 Hr. PR: COMM 105. Messages and characteristics of mass media with emphasis on effects of mass communication on society. This course is not open to freshmen.

406. *Advanced Organizational Communication.* 3 Hr. PR: COMM 306. Communication in superior/subordinate and peer relationships; emphasis on application of communication theory to complex organizations and organizational contexts. This course is not open to freshmen.

408. *Advanced Study in Nonverbal Communication.* 3 Hr. PR: COMM 308. Functions of nonverbal communication including status, power, immediacy, relationship development, regulation, turn-taking, leakage and deception, person perception, and emotional expressions.

490. *Teaching Practicum.* I, II. 1-3 Hr. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hr.) Prearranged experimental learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492. *Directed Study.* 1-3 Hr. Directed study, reading, and/or research.

492. *Directed Study.* 1-6 Hr. Directed study, reading, and/or research.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Community Health Promotion (CHPR)

170. *Health of the Individual.* 3 Hr. Examines personal health-related problems in terms of information, services, and actions, as they relate to attainment and maintenance of individual health.

172. *First Aid and Emergency Care.* 3 Hr. Emergency aid for the sick and injured. Emergency services aimed at reducing the potential of permanent disability or threats to life, as well as pain, damage, or suffering of a less serious nature.

210. *First-Aid Teaching Practicum.* 3 Hr. This class prepares students to conduct a first-aid course. Students work with the instructor in all aspects of course management. Students who complete this course are eligible to apply for instructor candidate training with the American Red Cross.

250. *History and Philosophy of Health Education.* 3 Hr. Provides the student with a historical perspective of health education's development, its present status, and its current philosophical foundations.

260. *Introduction to Peer Health Education.* 3 Hr. Prepares students to become peer health educators through the study of health concerns of students in higher education and examination of effective teaching strategies that result in positive health outcomes.

261. *Advanced Peer Health Education.* 3 Hr. Students apply a variety to teaching strategies based on the peer concept to health concerns of college students and other young adults.

265. *HIV/STD Prevention: Global Challenge.* 3 Hr. Addresses personal, social, legal, medical, and cultural aspects of HIV and sexually transmitted diseases and the health education efforts to stem the pandemic.

270. *Alcohol/Drug Education for Athletes.* 3 Hr. Chemical use and dependency has a significant impact on people in all walks of life. An overview of chemical dependency and current prevention and intervention is presented.

271. *Health in the Community.* 3 Hr. Develops an understanding of the organization, structure, and function of official, voluntary, and professional community health components in terms of their protecting and maintaining the health of the community.

275. *Substance Abuse: Student Leaders.* 3 Hr. Provides individuals, particularly those in organizational leadership roles, with an understanding of substance abuse, leadership roles, and decision-making skills for organizations.

293 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

301. *Elementary School Health Program.* 2 Hr. PR: Junior standing. The organization, educational aspects, and personnel relationships involved in elementary school health services, healthful school living, and health education.

302. *Secondary School Health Program.* 2 Hr. PR: Junior standing. The organization, educational aspects, and personnel relationships involved in secondary school health services, healthful school living, and health education.

304. *Organization and Administration of the School Health Program.* 3 Hr. PR: CHPR 271. The underlying philosophy for the organization, structure, administrative policies and procedures, and legal aspects of the school health program.

320. *Drug and Alcohol Abuse Prevention.* 3 Hr. Experiences designed to prevent the development of abusive drug-taking relationships by focusing on psychological variables such as self-esteem, coping skills, and development of support networks.

331. *Accident Prevention and Control Principles.* 3 Hr. Basic course which structures principles, concepts, and methodology of the safety movement into introductory experiences dealing with accident prevention and control efforts recommended for various social institutions and agencies.

332. *Safety Education Principles and Content.* 3 Hr. PR: CHPR 331 or consent. Study and analysis of content areas usually recommended for instructional programs within the field of safety, with emphasis on structured learning experiences.

375. *Physical Lifestyle Management.* 3 Hr. This course will provide an experience conducive to the understanding, exploration, experience, and development of scientifically sound physical health behaviors within the framework of the Transtheoretical Model of Health Behavior.

376. *Mental Lifestyle Management.* 3 Hr. This course will provide experience conducive to the understanding, exploration, and development of mental, emotional, and spiritual health processes that comprise and support personal holistic health.

380. *Women and Health.* 3 Hr. Examination of theories, myths, and practices surrounding women's physical and mental health from both historical and present-day perspectives. Exploration of specific health issues and controversies and the rise of the women's health movement.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Consideration of persistent issues and changing problems in the health promotion field. Emphasis will be placed upon health promotion interests of participating class members.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

Computer Engineering (CPE)

271. *Introduction to Digital Logic Design.* 3 Hr. PR: ENGR 102 or Consent. An introduction to the design of digital networks and computers. Topics include number systems, coding, Boolean and switching algebra, logic design, minimization of logic, sequential networks, and design on digital subsystems. (3 hr. lec.)

272. *Digital Logic Laboratory.* 1 Hr. Co-Req: CPE 271 Experiments with digital electronic circuits including number systems, design and application of modern digital circuitry for both combinational and sequential logic circuits. (3 hr. lab.)

293 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

310. *Microprocessor Systems.* 3 Hr. PR: CPE 271. Theory and design of microprocessors; organization and architecture of modern processors; integration of microproccessors with RAM, ROM, and I/O devices; machine language, assembly language, and software development. (3 hr. lec.)

311. *Microprocessor Laboratory.* 1 Hr. Co-Req: CPE 310. Machine language, assembly language, and hardware and software interfacing. (This includes editing, linking, and debugging.) Memory, I/O, and basic techniques of microprocessor interfacing. (3 hr. lab.)

312. *Microcomputer Structures and Interfacing.* 3 Hr. PR: CPE 310 and CPE 311. COREQ: CPE 313. Design of computer systems with emphasis on interface hardware including communications, high power interface devices, line driver/receiver circuits, A/D and D/A devices, and utilization of software techniques for programmed, interrupt, and direct memory access. (3 hr. lec.)

313. *Microcomputer Structures and Interfacing Laboratory.* 1 Hr. PR: CPE 310 and CPE 311. COREQ: CPE 312. A microprocessor-based single-board computer is designed and built. A semester project is required using standard I/O techniques. (3 hr. lab.)

442. *Introduction to Digital Computer Architecture.* 3 Hr. PR: MATH 375 and CPE 310 and CPE 311. Control, data, and demand driven computer architecture; parallel processing, pipelining, and vector processing; structures and algorithms for array processors, systolic architectures, design of architectures. (3 hr. lec.)

450. *Introduction to Microelectronics Circuits.* 3 Hr. PR: EE 251. (VLSI-Very Large Scale Integrated) circuit design, including layout, simulation, and performance optimization of basic digital logic functions and combinations of such basic functions into more complex digital system functions. CAD tools are used for projects. (3 hr. lec.)

454. *Digital System Testing.* 3 Hr. PR: CPE 310 or Consent. Conventional and emerging fault modeling concepts. Fault Simulation. Test generation algorithms, design for testability, compression testing techniques. Built in self-test. Functional testing. Boundary scan design and testing approaches. (3 hr. lec.)

470. *Digital Systems Design.* 3 Hr. PR: CPE 271. Hierarchical design methods, from the machine architecture through data flow concepts and control flow concepts, to implementation. Topics include: design methodology, design techniques, machine organization, control unit implementation, and interface design. (3 hr. lec.)

471. *Switching and Automata Theory.* 3 Hr. PR: CPE 271 and CPE 310 and MATH 375. Reliable design and fault diagnosis; synchronous and asynchronous sequential machines; finite state machines with automata theory. (3 hr. lec.)

480. *Senior Design Seminar.* 2 Hr. PR: CPE 310 and CPE 311 and ENGL 102. Selected topics leading to the selection of a project for CPE 481; writing a proposal expressing the intellectual design effort; includes professional development, legal and ethical aspects of engineering. (Equivalent to BIOM 480, CS 480, and EE 480) (2 hr. lec., 1 hr. conf.)

481. *Senior Design Project.* 3 Hr. PR: CPE 480 and CS 450. Design and construction of a computer engineering project. Emphasis on the professional approach of the analysis and solution of an engineering problem. (1 hr. lec., 1 hr. conf., 4 hr. lab)

484. *Real-Time Systems Development.* 3 Hr. PR: CS 350 or working knowledge of C programming language and UNIX. Characteristics of real-time systems, system and software development standards, structured and object oriented development methods for real-time systems, using a computer-aided software engineering (CASE) tool in the development of a large engineering project. Emphasis is on real-time systems requirements analysis and design. This is a project based course. (3 hr. lec.)

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* I, II, S 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

495. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Computer Science (CS)

101. *Introduction to Computer Applications.* 4 Hr. This course is taught in a hands-on lab setting. Microcomputer concepts, DOS and Windows, applications including spreadsheet, database management system, the Internet, and the world wide web. (4 hr. lab.)

110. *Introduction to Computer Science.* 4 Hr. Programming and program design; simple data types, variables, and expressions; block structures; program modularization through procedures, functions, and packages; repetition and selection through control structures; structured data types, including arrays and records; representative applications. (3 hr. lec., 2 hr. lab.)

111. *Introduction to Data Structures.* 4 Hr. PR: CS 110. Software development with abstract data types; elementary data structures including lists, stacks, queues, and binary trees. Object-oriented design and development, dynamic allocation, recursion, design methodology. (3 hr. lec., 2 hr. lab.)

210. *File and Data Structures.* 4 Hr. PR: CS 110. Complex internal data structures including hashing, balanced trees and multiway trees. Extension of internal data structures to external storage; indexed structures, external sorting and merging, access methods. (3 hr. lec., 2 hr. lab.)

220. *Discrete Mathematics.* 3 Hr. PR: CS 110 and MATH 155. Mathematical concepts used in computer science such as sets, relations, functions, counting principles, graphs, trees, and automata; introduction to basic graph algorithms and applications. (3 hr. lec.)

250. *Computer Organization and Assembler Programming.* 4 Hr. PR: CS 111. Machine organization, number systems, assembler and machine language, macros, subroutines, and the use of several computational formats. (3 hr. lec., 2 hr. lab.)

310. *Principles of Programming Languages.* 3 Hr. PR: CS 111. Theoretical and practical aspects of languages including internal representations, run-time environments, run-time storage management; historical, current, special-purpose and experimental languages; finite-state automata, regular expressions and context-free grammars, language translation, semantics and paradigms. (3 hr. lec.)

350. *Computer System Concepts.* 3 Hr. PR: CPE 310. System hardware and software organization with emphasis on microprocessor systems; operating system concepts including processes, memory management, and the user interface; elementary network concepts; introduction to UNIX. (3 hr. lec.)

410. *Compiler Construction.* 3 Hr. PR: CS 310. Theory and practice of the construction of programming language translators; scanning and parsing techniques, semantic processing, runtime storage organization, and code generation; design and implementation of interpreter or compiler by students. (3 hr. lec.)

415. *C++ Programming.* 3 Hr. PR: CS 111. An introduction to C++ programming language. C++ constructs, designing and implementing applications in C++, using software engineering methodologies. Object-oriented programming techniques in C++. (2 hr. lec., 1 hr. lab.)

420. *Design of Algorithms.* 3 Hr. PR: CS 320. Algorithms for advanced data structures including balanced trees and B-trees; algorithm design using backtracking and branch-and-bound; introduction to computational complexity and NP-completeness; approximation algorithms; linear programming. (3 hr. lec.)

422. *Automata Theory.* 3 Hr. PR: CS 320. Introduction to formal languages, grammars, and automata; regular expressions and finite automata, context-free languages and push down automata, context-sensitive languages and linear-bounded automata, and Turing machines and recursively enumerable languages. (3 hr. lec.)

426. *Discrete Mathematics 2.* 3 Hr. PR: CS 320 and MATH 156. Applications of discrete mathematics to computer science. Methods of solving homogeneous and non-homogeneous recurrence relations using generating functions and characteristic equations; digraphs to analyze computer algorithms; graph theory and its ramifications to computer algorithms. (Equivalent to MATH 378.)

430. *Advanced Software Engineering.* 3 Hr. PR: CS 330. Engineering process, project economics, project organizational and management issues, configuration management. (3 hr. lec.)

440. *Database Design and Theory.* 3 Hr. PR: CS 330. Relational data model using SOL and the relational algebra; Semantic data modeling using the ER model, relational database design theory. (3 hr. lec.)

450. *Operating Systems Structures.* 3 Hr. PR: CS 250 or CS 350. Support of computer components; device management and interrupts, process scheduling, file management, complete OS structure, OS development and debugging, configuration management, and performance testing. (3 hr. lec.)

451. *Advanced Operating Systems.* 3 Hr. PR: CS 450. Operating system topics not covered in CS 350 or CS 450; reliability and security, system management, and virtual machine structures; introduction to distributed and realtime systems; emphasis on design issues faced by actual systems. (3 hr. lec.)

453. *Data and Computer Communications.* 3 Hr. PR: CS 250 or CS 350. Introduction to fundamental concepts and principles of data and computer communications; digital data communication techniques, multiplexing, switching, LANs and WANs, and protocols and architecture. (3 hr. lec.)

455. *Computer Organization and Architecture.* 3 Hr. PR: CS 250 or CS 350. Computer structure; emphasis on implications for software design; evolution of computers; elementary digital logic; CPU structures; memory and I/O structures; pipelining and memory management; introduction to parallel and high-level architectures. (3 hr. lec.)

460. *Numerical Concepts.* 3 Hr. PR: MATH 156. Computer arithmetic, number representation, and errors; locating roots of equations; interpolation; numerical integration and differentiation; numerical solution of initial value problems for ordinary differential equations; solving systems of linear equations; data smoothing. (3 hr. lec.)

470. *Introduction to Computer Graphics.* 3 Hr. PR: CS 210. Overview of I/O hardware, elements of graphics software, fundamental algorithms, two-dimensional viewing and transformations, design for interaction, and introduction to three-dimensional concepts. (3 hr. lec.)

472. *Introduction to Artificial Intelligence.* 3 Hr. PR: CS 330. Survey of AI techniques, heuristic search, game playing, knowledge representation schemes: logic, semantic net, frames, rule-based; natural language processing. Advanced AI techniques/ systems: planning, blackboard architecture, neural net model; AI implementation. (3 hr. lec.)

480. *Senior Design.* 2 Hr. PR: CS 330 and ENGL 102. Selected topics leading to the selection of a project for CS 481; writing a proposal expressing the intellectual design effort; including professional development, legal, and ethical aspects of computer science. (Equivalent to CPE 480, BIOM 480, and EE 480.) (2 hr. lec.., 1 hr. conf.)

481. *Senior Project.* 3 Hr. PR: CS 330. Design and implementation of a software development project under the supervision of a computer science faculty member. Emphasis will be on requirements, specification, analysis, testing, and maintenance. (1 hr. lec., 1 hr. conf., 4 hr. lab.)

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

Counseling (COUN)

303. *Introduction to Helping Professions.* I, II, S. 3 Hr. To assist in evaluating students potential for a career in the helping professions. Exposure is provided to client populations served by helping professionals, along with a selection of intervention strategies used in those professions.

416. *Behavior Problems and the School.* II. 3 Hr. A course primarily oriented toward assisting educators to utilize current psychological principles related to classroom discipline, as well as academic and social adjustment.

483 A-Z. *Workshop in Counseling and Guidance.* I, II, S. 1-12 Hr. PR: Consent. To take care of credits for special workshops and short intensive limit courses on methods, supervision, and other special topics.

Curriculum & Instruction (C&I)

Note: Some C&I courses are being phased out and replaced by new Education (EDUC) courses as part of the revised teacher preparation program. See your advisor for a current course listing.

324. *Teaching Language Arts: Secondary School.* I, II. 3 Hr. Includes an examination and application of relevant curricular materials and teaching techniques.

337. *Mathematics in the Junior High School and Middle School.* II. 3 Hr. PR: 6 hr. college mathematics or consent. Study of teaching of mathematics in the junior high school and/or middle school; application of mathematics content to teaching; instructional techniques and materials.

410. *Early Childhood Education 1.* I, II, S. 3 Hr. PR: CDFS 316. An introduction to curriculum objectives, instructional methods and materials, and evaluation in early childhood education. (Pre-K to 4th grade) that includes a field experience with individualized instruction for one child.

411. *Early Childhood Education 2.* I, II, S. 3 Hr. PR: C&I 410. This course is designed for individuals who will be working in early childhood education pre-K to 4th grade. Topics include working with families of young children; designing, teaching, and evaluating experiential lessons for small groups of children; and gathering and assessing developmental data on small groups of children. A semester-long field experience with a class of young children is required.

412. *Methods in Preschool Education.* I. 3 Hr. PR: EDUC 200 or equiv. Development of an experiential model of teaching young children. Application of methods in basic needs areas of nursery-early childhood education consistent with an experiential model of teaching.

414. *Creative Experiences in Early Childhood.* II. 3 Hr. PR: EDUC 200 or equiv. Examination of creative experiences for young children and their relationship to child development. A special focus on play behavior as a learning medium with emphasis on program planning, curriculum development, and instructional strategies.

416. *Early Language and Communication Experiences.* I. 3 Hr. PR: EDUC 200 or equiv. Presents activities for developing language and communication skills in children two-five years of age. Covers a broad range of temporary and enduring forms of communication in visible and audible media.

418. *Management of Preschool Education.* II. 3 Hr. PR: EDUC 200 or equiv. (A field experience with children two-five years of age is required.) Planning, designing, and assessing programs for children ages two-five years with emphasis on management skills. (Alternate years.)

424. *Approaches to Teaching Language.* II. 2 Hr. PR: LING 101 and ENGL 102. Designed for prospective teachers of English and language arts. Focus is upon planning and implementing methods of teaching English as a language. Materials and resources appropriate for public school instruction are analyzed and utilized.

425. *Approaches to Teaching Literature.* II. 2 Hr. PR: Junior standing. Designed for prospective teachers of English and language arts. Course focuses upon methodologies for teaching literature in public schools. Workshop format will provide opportunities for peer teaching activities as students apply methods of teaching literature.

434. *Teaching Mathematics: Secondary School.* I, II. 3 Hr. Includes an examination and application of relevant curricular materials and teaching techniques.

444. *Teaching Science: Secondary School.* I, II. 3 Hr. PR: Includes an examination and application of relevant curricular materials and teaching techniques.

454. *Teaching Social Studies: Secondary School.* I, II. 3 Hr. Includes an examination and application of relevant curricular materials and teaching techniques.

480 A-Z. *Special Problems and Workshops.* I, II, S. 2-4 Hr. (Maximum of 8 semester hours may be applied toward the master's degree.) PR: 14 hr. in education. Credits for special workshops and short intensive unit courses on methods, supervision, and other special topics.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program. To be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

497. *Research.* I, II, S. 1-6 Hr. Independent research projects.

Dance (DANC)

101. *Introduction to Dance.* I, II. 3 Hr. Introductory course designed to develop an aesthetic appreciation and understanding of dance as a fine art and its impact on society.

102. *Introduction to Dance Techniques.* I, II. 2 Hr. Fundamental principles of dance with emphasis on the development of stationary and motor forms of techniques to develop body awareness, coordination, endurance, and flexibility with elements of creativity.

120. *Advanced Modern Dance.* I, II. 1 Hr. PR: DANC 102 or consent.

121. *Intermediate Modern Technique.* II. 2 Hr. PR: DANC 102 or DANC 160. Intensive concentration of technique form, interpretation, and artistic sensitivity of performance. Barre and center practice developing in difficulty as to length and complexity will enhance the level of execution.

130. *Intermediate Jazz Dance.* I, II. 1 Hr. Development of jazz technique and appreciation of jazz as an American art form.

131. *Elementary Jazz.* I, II. 2 Hr. PR: DANC 102 or consent. Basic jazz dance fundamentals and techniques; development of coordination, strength, and flexibility through the execution of the elementary jazz warm-ups, movement progressions, and combinations.

132. *Intermediate Jazz.* II. 2 Hr. PR: DANC 131. Continuation of jazz dance techniques and concepts with an emphasis on jazz isolations, polyrhythms, and syncopated movement sequences; continued practice in the development of the body as an instrument of expression.

140. *Ballet.* I, II. 1 Hr. Ballet vocabulary with emphasis on barre work and adagio and allegro technique.

141. *Introduction to Ballet.* I, II. 2 Hr. PR: DANC 102 or Consent. Simple ballet techniques, positions, basic barre work, and motor combinations will be developed.

142. *Elementary Ballet.* I, II. 2 Hr. PR: DANC 102 and 141. Techniques of classical theatrical dancing. Includes barre exercises, port de bras, adage combinations, and center practice in jumping and tours. A theoretical knowledge and technical achievement is stressed.

151. *Tap Dance 1.* I, II, S. 1 Hr. Introduction to tap dance technique, including study of basic tap vocabulary, fundamental rhythms, locomotor movements, and tap styles.

152. *Tap Dance 2.* I, II, S. 1 Hr. PR: DANC 151. Expansion and development of the basic tap technique and vocabulary introduced in DANC 151. Introduction to Irish riffs, pull-backs, waltz, tap, basic traveling steps, and standard audition material.

153. *Ballroom Dance.* I, II. 1 Hr. Introduction to popular ballroom dancing. Styles will range from fox trot, waltz, and swing to basic Latin dances.

154. *African Dance.* I, II. 2 Hr. Exploration of the culture and technique of African dance.

160. *Technique and Composition 1.* I. 2 Hr. PR: DANC 102. In-depth study of movement phrases in the elements of space, time, and force. Emphasis on technique in stationary and motor forms, combinations, and progressions.

161. *Technique and Composition 2.* I, II. 2 Hr. PR: DANC 160. A continuation of in-depth study of movement phrases in the elements of space, time, and force. Primary focus on combinations and progression in choreographic studies.

162. *Choreography 1.* I, II. 2 Hr. PR: DANC 102. Creative projects dealing with the basic elements of dance composition through the development of improvisational and compositional skills which will contribute to the invention and development of movement materials.

170. *Rhythm in Dance.* I. 3 Hr. PR: DANC 262 and (DANC 241 or DANC 121.) An exploration of dance technique in its relation to musical compositions and principles of choreography; developing an aesthetic and critical awareness of these principles as they are displayed in dance works.

221. *Advanced Modern Technique.* II. 2 Hr. PR: DANC 102, 160 or 121. Advanced tutorial techniques relating advanced theories and individual study in the design of technique, style, and compositional form.

231. *Advanced Jazz.* I. 2 Hr. PR: DANC 132. In-depth exploration of both traditional and contemporary jazz techniques and styles; continues progression towards a more advanced level of technical skill as developed and utilized through this specific dance technique.

241. *Advanced Ballet.* I, II. 2 Hr. PR: DANC 142. Advanced technique of classical theatrical dancing. An in-depth continuation of adage, allegro, and pointe work. Combinations and choregraphic studies will be a focus of training. (Repeatable for max. 6 hr. credit.) Fundamentals will also be developed.

250. *Theatre Dance 1.* I. 2 Hr. PR: DANC 142. Develops a basic knowledge of choreographed movement in the musical theatre dance idiom. Includes a study of musical dance forms for the actor, and Broadway dance vocabulary and styles. (Also listed as THET 350.)

251. *Theatre Dance 2.* II. 2 Hr. PR: DANC 250 or THET 350. Comprehensive study of representative musical theatre dance styles, relative to period (1900 to present) and ethnic derivation. Includes study of isolationary movement and principles of classical dance applicable to the Broadway idiom. (Also listed as THET 351.)

262. *Choreography 2.* I, II. 2 Hr. PR: DANC 162. An in-depth concentration and continuation of DANC 162. Solo, duo, and group ensembles will enhance analysis and critical appraisal. Production of student works will be included.

270. *Creative Dance for Educators.* I, II. 2 Hr. PR: DANC 102. Specific learning experiences for the future of dance education and competencies to be achieved for children's dance. Grades K-12. Integration of movement experience with other academic subjects and various cultural heritage emphasized.

272. *World Dance.* II. 3 Hr. Introduction to world cultures through the media of dance lecture and movement. Study of global religious, social, educational, and courtship rituals as related to dance.

293 A-Z. *Special Topics*. I, II, S. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

361. *Choreography 1*. I, II. 2 Hr. PR: DANC 102. Creative projects dealing with the basic elements of dance composition through the development of improvisational and compositonal skills which will contribute to the invention and development of movement materials.

362. *Advanced Choreography*. II. 3 Hr. PR: DANC 262. Provides opportunity for creative explorations and analysis of principles of dance compositiion through improvisations and problem solving. Informal presentations of student works will be included.

371. *History and Philosophy of Dance*. II. 3 Hr. Cultural survey of dance as an expression of the society it represents; philosophy of dance; relation of dance to other art forms; dance as an educational experience.

493 A-Z. *Special Topics*. I, II. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

495. *Independent Study*. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis*. 3 Hr.

498. *Honors*. 3 Hr.

Dental Hygiene (DTHY)

101. *Orientation to Dental Hygiene*. 2 Hr. PR: Enrollment in dental hygiene. Historical development of dental hygiene with emphasis on the philosophy, responsibilities, and current role of the dental hygienist as a member of the dental health team.

185. *Oral Anatomy*. 3 Hr. PR: Enrollment in dental hygiene. Human teeth and the anatomy of the head and neck with emphasis on structures in or related to oral cavity.

205. *The Theory and Practice of Prevention*. 2 Hr. PR: Enrollment in dental hygiene. Philosophy and techniques of preventive dentistry.

220. *Dental Nursing Techniques*. 2 Hr. PR: Enrollment in dental hygiene. Emergency first aid and principles of nursing applicable to the dental office.

225. *Dental Hygiene Techniques*. 4 Hr. PR: Enrollment in dental hygiene. Fundamental principles and techniques of dental hygiene are presented through lectures, laboratory, and clinical participation.

293. *Special Topics*. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

300. *Anesthesia for Dental Hygiene*. I. 1 Hr. Application of neuroanatomy, physiology, and pharmacology to the administration of regional anesthesia using local anesthetic agents. Management of complications encountered and the techniques of administering these agents will be presented.

301. *Public Health*. 2 Hr. PR: Enrollment in dental hygiene. Theory and practice of preventive dentistry and community.

302. *Dental Health Education*. 3 Hr. PR: Enrollment in dental hygiene. Methods, materials, and resources used in teaching dental health to various population groups.

320. *Dental Radiology*. 2 Hr. PR: Enrollment in dental hygiene. Basic principles and procedures in oral radiology technics and interpretation.

322. *Dental Radiology*. 1 Hr. PR: DTHY 320. The application of radiology principles and techniques. Clinical integration and case presentations will be emphasized.

360. *Dental Materials*. 3 Hr. PR: Enrollment indental hygiene. Lecture and laboratory covering the science and manipulation of dental materials.

361. *Expanded Functions*. 2 Hr. PR: DTHY 360. Lecture and laboratory covering specialty topics in dentistry and four-handed dental assisting. Assisting, and the placing and carving of amalgam and resin restorations in dentiform teeth. (1 hr. lec., 4 hr. lab.)

363. *Periodontics 1*. 1 Hr. PR: Enrollment in dental hygiene. Tissues of the periodontium, histopathology of penodontal disease with emphasis on etiology, assessment, diagnosis, treatment, and prevention within the scope of dental hygiene.

364. *Periodontics 2*. 2 Hr. PR: DTHY 363. A sequential course to DTHY 363.

366. *Technical Expression and Dental Literature*. I Hr. PR: Dental hygiene major. Preparation and analysis of professional communications.

370. *Dental Hygiene Clinical Methods*. 2 Hr. PR: DTHY 225. Principles of oral debridement, instruction in the care of special patients, use of diagnostic aids, and nutritional counseling.

372. *Clinical Dental Hygiene 1*. 2 Hr. PR: DTHY 225. Clinical application of dental hygiene principles and techniques.

374. *Clinical Dental Hygiene 2.* 2 Hr. PR: DTHY 370, Coreq: DTHY 372. Clinical application of dental hygiene principles and techniques.

378. *Dental Hygiene Teaching Methods.* 2 Hr. PR: Enrollment in dental hygiene. Concepts and principles of administration, curriculum, and clinical teaching unique to dental auxiliary education. Emphasis on overall role of the dental hygiene educator.

380. *Interdisciplinary Approach to Rural Health.* 1 Hr. Fundamental principles of and background information on Appalachian history, poverty, and cultural diversity for the assessment of rural health needs. Assess the delivery of health care services and community development in rural settings.

402. *Dental Hygiene Practice.* 2 Hr. PR: Enrollment in dental hygiene. Scope of practice for the dental hygienist including ethical and legal considerations. Public and professional relations as well as practice management are discussed.

404. *Advanced Dental Hygiene Methods 1.* 1 Hr. PR: Fourth year in dental hygiene. Principles of advanced clinical dental hygiene and practice in non-traditional settings.

405. *Advanced Clinical Dental Hygiene 1.* 4 Hr. PR: Fourth year in dental hygiene. Clinical experience in traditional and expanded duties; pre- and post-operative care of surgical patients, and radiology.

406. *Advanced Clinical Dental Hygiene 2.* 3-4 Hr. PR: Fourth year in dental hygiene. Continuation of clinical practice experience in dental hygiene procedures.

407. *Advanced Dental Hygiene Methods 2.* 2 Hr. PR: Fourth year in dental hygiene. Principles of advanced clinical dental hygiene and practice in non-traditional settings.

450. *Dental Health Education 2.* 2 Hr. PR: DTHY 302. Advanced dental health education with a research component. A problem-based learning experience.

451. *Dental Health Education 3.* 2 Hr. PR: DTHY 450. Advanced dental health education with field experiences in three settings. Case histories developed and research study completed.

478. *Clinical Evaluation.* I. 2 Hr. PR: DTHY 378. Preparation for clinical instruction and evaluation. Emphasis is placed on clinical evaluation procedures, proper instrumentation, and the skills/strategies utilized to promote affective and psychomotor skill development in students.

490. *Teaching Practicum.* 1-3 Hr. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Economics (ECON)

201. *Principles of Microeconomics.* 3 Hr. PR: Sophomore standing; pre-requisite may be waived at regional campus. Introductory microeconomics analysis. Competitive behavior of firms, price determination, efficiency in production, and equity in distribution.

202. *Principles of Macroeconomics.* 3 Hr. PR: ECON 201. Introductory macroeconomics analysis. Aggregate demand and supply, saving, investment, the level of employment and national income determination, monetary and fiscal policy.

225. *Elementary Business and Economics Statistics.* 3 Hr. PR: Sophomore standing and (MATH 126 with grade of C or better) or (MATH 129 with grade of C or better) or MATH 155 or MATH 156 or MATH 124. Basic concepts of statistical models, distributions, probability, random variables, tests of hypotheses, confidence intervals, regression, and correlation with emphasis on business and economic examples. (Equivalent to STAT 211.)

293 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

301. *Intermediate Micro-Economic Theory.* 3 Hr. PR: ECON 201. Consumer choice and demand; price and output determination of the firm, and resource allocation, under different market structures; welfare economics, externalities, public goods, and market failure; general equilibrium; other topics.

302. *Intermediate Macro-Economic Theory.* 3 Hr. PR: ECON 201 and ECON 202. Forces which determine the level of income, employment, output, the inflation rate, and the balance of trade. Particular attention to consumer behavior, investment determination, and government fiscal and monetary policy.

325. *Applied Business and Economic Statistics.* 3 Hr. PR: ECON 225 or STAT 211. Continuation of ECON 225. Principal statistical methods used in applied business and economic research including multiple regression, index numbers, time series analysis, forecasting models and methods, and sampling design.

331. *Money and Banking.* 3 Hr. PR: ECON 201 and ECON 202. The U.S. monetary and banking system and its functional relationship to the economic system, monetary theory and policy.

421. *Introduction to Mathematical Economics.* 3 Hr. PR: ECON 202 and (MATH 150 or MATH 155 or MATH 156.) Principal mathematical techniques including set operation, matrix algebra, differential and integral calculus employed in economic analysis. Particular attention given to static (or equilibrium) analysis, comparative-static analysis, and optimization problems in economics.

425. *Introductory Econometrics.* 3 Hr. PR: ECON 202 and (ECON 225 or STAT 211.) Analysis of economic models using basic econometric methods. Specification, computation, and interpretation of linear regression.

441. *Public Economics.* 3 Hr. PR: ECON 202. Economic roles of the public sector. Particular attention to market failure, redistributing income, the financing of public sector activities, relationships between federal, state, and local governments, and public choice.

445. *Government and Business.* 3 Hr. PR: ECON 202. Examination of market structure, conduct, and performance. Analysis of market regulation including antitrust laws and regulation of monopolies.

451. *International Economics.* 3 Hr. PR: ECON 202. Development of trade among nations; theories of trade; policies, physical factors, trends, barriers to trade. Determination of exchange rates. Open economy macroeconomics.

452. *Economics of Cuba.* II, S. 3 Hr. PR: ECON 201 and ECON 202 or consent. COREQ: HIST 242 or POLS 355. The Cuban economy during the socialist period with focus on the crisis period after the loss of Soviet subsidies. This course requires travel to Cuba.

454. *Comparative Economic Systems.* 3 Hr. PR: ECON 202. Structure and processes of existing economic systems including capitalism, planned socialism, and market socialism. Problems encountered by economies in transition from planned socialism to capitalism.

455. *Economic Development.* 3 Hr. PR: ECON 202. The problems, changes, and principal policy issues faced by non-industrialized countries.

461. *Regional Economics.* I. 3 Hr. PR: ECON 202. Analysis of the regional economy's spatial dimension, emphasizing interregional capital and labor mobility, the role of cities, objectives and issues of regional policy, lagging regions and Appalachia, growth poles, and regional growth and income distribution.

462. *Urban Economics.* 3 Hr. PR: ECON 202. Analyzes growth, decline, and socioeconomic problems of cities. Topics include the development of cities, urban spatial structure and land-use patterns, poverty and discrimination, housing, urban transportation and congestion, local government structure, and urban fiscal problems.

471. *Labor Economics.* 3 Hr. PR: ECON 202. Labor market analysis. Topics include wage and employment determination, human capital theory, discrimination, unemployment, migration, effects of unions and government regulation, and life-cycle patterns of work.

481. *American Economic History.* 3 Hr. PR: ECON 220. Central issues in the development of the American economy.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* 1-6 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Educational Psychology (EDP)

101. *Learning Strategies for Academic Success.* 3 Hr. The purpose of the course is to help students develop active learning strategies that are research-based and appropriate for the college curriculum that will enable them to achieve academic success.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Education (EDUC)

100. *Education Colloquium.* 1 Hr. Components of and requirements for the teacher preparation program, including specializations, professional organizations, requirements for admission to the major, avenues to program completion, and requirements for work with children or youth. (First offered Fall, 1995.)

200. *Professional Inquiry in Education.* 3 Hr. PR: EDUC 100 and ENGL 101 and ENGL 102. An examination of students preconceptions about education and their socialization process relative to the following; aims and purposes of public education, students as learners, curriculum, instruction. (First offered Spring 1997.)

301. *Learning in Educational Settings 1.* 2 Hr. PR: Admission to the major, grade of C or better in EDUC 200 and PSYC 101 and one course in human development. Examination and utilization (with initial emphasis upon examination) of learning models and paradigms from behavioral and cognitive perspectives; consideration of learner characteristics, attitudes, motivations, thinking processes, and subject matter content affecting student learning. (First offered Fall, 1997.)

302. *Learning in Educational Settings 2.* 2 Hr. PR: Admission to the major, grade of C or better in both EDUC 301 and EDUC 311. Analysis and application of learning models and paradigms from behavioral and cognitive perspectives; consideration of learner characteristics, attitudes, motivations, thinking processes, and subject matter content affecting student learning. (First offered Spring, 1998.)

311. *Practicum 1.* 1 Hr. PR: Admission to the major, grade of C or better in EDUC 200 and EDUC 301 Conc. Application of models and paradigms of learning in content area through tutoring of individuals and small groups in an assigned public school site. (First offered Fall, 1997.)

312. *Practicum 2.* 1 Hr. PR: Admission to the major. Grade of C or better in EDUC 301 and EDUC 311 Conc. Application of paradigms of learning in content area through tutoring of individuals and small groups in an assigned public school site. (First offered Spring, 1998.)

400. *Instructional Design and Evaluation.* 3 Hr. PR: Admission to the major and a grade of C or better in both EDUC 302 and EDUC 312. Examination and demonstration of teacher behaviors required to plan classroom instruction, assess student learning, and evaluate instruction; emphasis on instruction, assessment, and evaluation to accommodate a wide range of student needs. (First offered Fall, 1998.)

401. *Managing and Organizing Learning Environments.* 3 Hr. PR: Admission to the major and a grade of C or better in EDUC 400 and EDUC 410 Conc. Examination of research and practice in organizing and managing school learning environments to produce optimal learning; development of management systems congruent with personal philosophy, research, learner characteristics, and content area. (First offered Spring, 1999.)

405. *Issues in Middle School Education.* I, II. 2 Hr. PR: EDUC 302. An analysis of the special needs of middle age students and the curriculum and strategies advocated for use in a middle school. Required for all students with a 5-8 content specialization.

410. *Practicum 3.* 2 Hr. PR: Grade of C or better in EDUC 312 and EDUC 400 Conc. Planning and implementing content area instruction, applying different instructional models and assessment techniques to small and large groups in an assigned public school site. (First offered Fall, 1998.)

411. *Practicum 4.* 2 Hr. PR: Grade of C or better in EDUC 410 and EDUC 401 Conc. Planning and implementing content area instruction, applying various management, instruction, and assessment models to small and large groups in an assigned public school site. (First offered Spring, 1999.)

414. *Promoting Creative Expression in Elementary Classrooms.* II. 3 Hr. PR: EDUC 410. Includes an examination of creative experiences for children in elementary school, pre-school-grade 6. Topics include the use of the creative arts in learning activities, curriculum development, and instructional strategies.

430. *Mathematics Methods for Elementary Teachers.* I. 3 Hr. PR: EDUC 312. Students will examine the content and pedagogy appropriate for mathematics instruction in the elementary grades. Emphasis is placed on the current reform movements in mathematics education.

440. *Elementary-Early Childhood Science Methods.* I. 3 Hr. PR: EDUC 312. Provides students with the knowledge, skills and affective qualities needed to be an effective elementary science teacher and be committed to teaching science in the elementary classroom.

450. *Issues and Methods for Teaching Elementary Social Studies.* II. 3 Hr. PR: EDUC 410. Students examine issues facing social studies education and evaluate and plan lessons and instructional activities that apply learning theory to the philosophy and standards of social studies education for all elementary students.

460. *Foundations of Language and Literacy.* II. 4 Hr. PR: EDUC 200 and EDUC 311. This course focuses on foundations of language and literacy development. Students construct philosophies, approaches, and strategies to promote development of literacy in the young child. Focus will include the larger contexts of literacy including home and community.

461. *Promoting Literacy Connections.* I. 4 Hr. PR: EDUC 460. This course empahsizes the development of literacy in the elementary setting. Students will develop and refine philosophies, approaches, and strategies to promote the development of literacy in the primary grades. Focus will include the larger contexts of literacy including content literacy, thematic instruction, and the teacher's leadership role.

498. *Honors.* I, II. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Electrical Engineering (EE)

221. *Introduction to Electrical Engineering.* 3 Hr. PR: ENGR 102 and MATH 156. Electrical engineering units, circuit elements, circuit laws, measurement principles, mesh and node equations, network theorems, operational amplifier circuits, energy storage elements, sinusoids and phasors, sinusoidal steady state analysis, average and RMS values, complex power. (3 hr. lec.)

222. *Introduction to Electrical Engineering Laboratory.* 1 Hr. Co-Req: EE 221. Design and experimental exercises in basic electrical circuits. Use of the digital computer to solve circuit problems. (3 hr. lab.)

223. *Electrical Circuits.* 3 Hr. PR: EE 221 and EE 222 and PHYS 112, Co-Req: MATH 251. Continuation of EE 221. Time response of RC and RL circuits, unit step response, second order circuits, poly-phase systems, mutual inductance, complex frequency, network frequency response, two-port networks and transformers. Fourier methods and Laplace Transforms. (3 hr. lec.)

224. *Electrical Circuits Laboratory.* 1 Hr. Co-Req: EE 223. Design and experimental exercises in circuits. Transient circuits, steady state AC circuits, frequency response of networks. Use of digital computer to solve circuit problems. (3 hr. lab.)

251. *Digital Electronics.* 3 Hr. PR: EE 221 and EE 222 and CPE 271 and PHYS 112. Diode and biopolar and field-effect transistor device operation and switching models. Use of bipolar and field-effect transistors and diodes in switching and logic circuits. Switching circuits and logic gates including logic levels, circuit configuration, and interfacing. (3 hr. lec.)

252. *Digital Electronics Laboratory.* 1 Hr. Co-Req: EE 251. Design, fabrication, and measurement of digital electronic circuits. Modeling and use of discrete devices, logic gates, display devices in switching circuits and timer circuits, interfacing with integrated logic gates. (3 hr. lab.)

293. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

306. *Basic Electrical Engineering.* 3 Hr. PR: MATH 251 and PHYS 111. Introductory course for non-majors. Introduction to electronics, basic circuit designs, and rotating electric machinery with application to instrumentation, data acquisition systems, industrial control systems, industrial machinery, and power distribution systems. (3 hr. lec.)

307. *Basic Electrical Laboratory.* 1 Hr. Co-Req: EE 306. Laboratory experiments in measurement of electrical quantities and circuit parameters and the performance of digital and analog instrumentation and control systems. (3 hr. lab.)

327. *Signals and Systems 1.* 3 Hr. PR: MATH 261 and EE 223. Introduction to linear system models and solutions in the time and frequency domains. Balanced emphasis is placed on both continuous and discrete time and frequency methods. (3 hr. lec.)

328. *Signals and Systems Laboratory.* 1 Hr. PR: EE 327 and Co-Req: EE 329. Laboratory experiments in measurement and analysis of systems and signals. (3 hr. lab.)

329. *Signals and Systems 2.* 3 Hr. PR: EE 327 and STAT 215. Analysis of continuous and discrete time systems. Block diagrams, stability, feedback control. Statistical description of nondeterministic signals, correlation functions, and spectral density, concepts applied to communication and feedback systems. (3 hr. lec.)

335. *Electromechanical Energy Conversion and Systems.* 3 Hr. PR: EE 223 and EE 224 and PHYS 112. Electric energy sources, fundamentals of electromechanical energy conversion, transformers and rotating machinery, transmission line parameters. (3 hr. lec.)

336. *Electromechanical Energy Conversion and Systems Lab.* 1 Hr. Co-Req: EE 335. Single-phase transformer, dc motor and generator performance and characteristics, synchronous machine performance and characteristics. (3 hr. lab.)

345. *Engineering Electromagnetics.* 3 Hr. PR: MATH 261 and PHYS 112. Introduction to electromagneric theory and applications. Electric charge, electric and magnetic fields, scalar potentials, boundary value problems. Laplace's and Poisson's equations, electric and magnetic materials. Maxwell's equations. (3 hr. lec.)

355. *Analog Electronics.* 3 Hr. PR: EE 223 and EE 251. Electronic devices in analog circuits. Small-signal and graphical analysis of BJT and FET circuits; frequency response, feedback, and stability. Linear and nonlinear operational amplifier circuits. Power amplifiers and power control by electronic devices. (3 hr. lec.)

356. *Analog Electronics Laboratory.* 1 Hr. Co-Req: EE 355. Design, fabrication, and measurement of analog electronic circuits. Use of discrete devices, integrated circuits, operational amplifiers, and power electronic devices. Study of biasing and stability, frequency response, filters, analog computation circuits, and power control circuits. (3 hr. lab.)

411. *Fundamentals of Control Systems.* 3 Hr. PR: EE 327. Introduction to classical and modern control; signal flow graphs; state-variable characterization; time-domain, root-locus, and frequency techniques; stability criteria. (3 hr. lec.)

413. *Introduction to Digital Control.* 3 Hr. PR: EE 327. Sampling of continuous-time signals and transform analysis. State-variable analysis for linear discrete-time systems and design of digital controller. (3 hr. lec.)

425. *Bioengineering.* 3 Hr. Introduction to human anatomy and physiology using an engineering systems approach. Gives the engineering student a basic understanding of the human system so that the student may include it as an integral part of the design. Co-listed with MAE 473. (3 hr. lec.)

426. *Biometric Systems.* 3 Hr. PR: STAT 215 and MATH 261 and CS 111 (EE 327 and CS 350 suggested). This course presents an introduction to the principles of operation, design, testing, and implementation of biometric systems, and the legal, social, and ethical concerns associated with their use. (3 hr. lec.)

431. *Electrical Power Distribution Systems.* 3 Hr. PR: EE 335 and EE 336 or consent. General considerations; load characteristics; subtransmission and distribution substations; primary and secondary distribution, secondary network systems; distribution transformers; voltage regulation and application of capacitors; voltage fluctuations; protective device coordination. (3 hr. lec.)

435. *Introduction to Power Electronics.* 3 Hr. PR: EE 335 and EE 355 and EE 356 or consent. Application of power semiconductor components and devices to power system problems; power control; conditioning processing, and switching. Course supplemented by laboratory problems. (3 hr. lec.)

436. *Power Systems Analysis.* 3 Hr. PR: EE 335 and EE 336. Incidence and network matrices, Y-Bus, symmetrical and unsymmetrical faults, load-flow and economic dispatch, MW-frequency and MVAR-voltage control. A power system simulator will be used for demonstrations. (3 hr. lec.)

437. *Fiber Optic Communications.* 3 Hr. PR: EE 329 and EE 345. Fundamentals of optics and light wave propagation, guided wave propagation and optical wave guides, light sources and light detectors, couplers, connections, and fiber networks, modulation noise and detection in communication systems. (3 hr. lec.)

450. *Device Design and Integration.* 3 Hr. PR: EE 251 and EE 355. Fundamentals of semiconductor materials, p-n junctions, metal-semiconductor junctions, JFET's, MESFET's, MOSFET's, physical device design, device simulation, gate level, and CMOS design and layout. (3 hr. lec.)

453. *Operational Amplifier Applications.* 3 Hr. PR: EE 355 and EE 356. Linear integrated circuit building blocks applied to such functions as amplification, controlled frequency response, analog-digital conversion, sampling, and waveform generation. (2 hr. lec., 3 hr. lab.)

455. *Introduction to Microfabrication.* I. 3 Hr. PR: EE 353 or consent. Introduction to the physical processes underlying current and emerging microfabrication technology and their selective use in the technology computer aided design (TCAD) and fabrication of electrical, optical, and micromechanical devices and systems. (3 hr. lec.)

457. *Fundamentals of Photonics.* I, II. 3 Hr. PR: EE 345 and EE 353 or consent. Introduction to the physical models and mechanisms through which generation, characterization, and control of light is achieved. Applications including optical information processing, holographic storage, and photonic switching provide the framework for photonic concept presentation. (3 hr. lec.)

459. *Transistor Circuits.* 3 Hr. PR: EE 355 and EE 356 or equiv. Analysis and design of subcircuits used in analog integrated circuit modules. Transistor models, low-frequency response of multistage amplifiers, current sources, output stages and active loads. (3 hr. lec.)

461. *Introduction to Communications Systems.* 3 Hr. PR: EE 329. Introduction to the first principles of communications systems design. Analysis and comparison of standard analog and pulse modulation techniques relative to bandwidth, noise, threshold, and hardware constraints. Communications systems treated as opposed to individual circuits and components of the system. (3 hr. lec.)

463. *Digital Signal Processing Fundamentals.* 3 Hr. PR: EE 251 and EE 252 and EE 328 and EE 329. Theories, techniques, and procedure used in analysis, design, and implementation of digital and sampled data filters. Algorithms and computer programming for software realization. Digital and sampled data realizations, switched capacitor and charge-coupled device IC's. (3 hr. lec.)

465. *Introduction to Digital Image Processing.* I. 3 Hr. PR: EE 327 and EE 329. Introduction to the vision process fundamental mathematical characterization of digitized images, two-dimensional transform methods used in image processing, histogram analysis and manipulation, image and filtering techniques, image segmentation, and morphology. (3 hr. lec.)

480. *Senior Design Seminar.* 2 Hr. PR: Penultimate semester. Design methodology, including specifications, reliability, design optimization, patent searching, cost estimating, project planning and scheduling, and design. (2 hr. lec., 1 hr. conf.)

481. *Senior Design Project.* 3 Hr. PR: EE 251 and EE 335 and EE 355 and EE 480 or consent. Detailed design and execution of an electrical engineering project. Emphasis is placed on the professional approach to the analysis and solution of an engineering problem. Other topics include professional development, legal, and ethical aspects of engineering. (1 hr. lec., 1 hr. conf., 4 hr. lab.)

487. *Electric Vehicle Design.* II, 3 Hr. PR: EE 221 or EE 306. Introduction to all electric and hybrid electric vehicles. Review of safety considerations, energy storage, motor and instrumentation technologies. Simulations software for energy requirements, efficiency, and capabilities of EV's is required. Participation is expected in the design, construction, and testing of an EV.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Engineering (ENGR)

101. *Freshman Engineering Design.* 2 Hr. Co-Req: MATH 155. Study of engineering design process through design projects and development of communication skills through technical writing, engineering drawing, and oral presentation.

102. *Freshman Engineering Design and Analysis.* 3 Hr. PR: ENGR 101 or Consent. Use of computer as a tool for analysis, design, and simulation of engineering applications through software packages such as MATLAB and high level programming languages such as C.

199. *Orientation to Engineering.* 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, students responsibilities, and opportunities. Development of academic success strategies and University experiences to equip students to make life decisions.

488. *Cooperative (Co-Op) Education Experience.* 1-18 Hr. PR: Consent. Prearranged co-op experience in student's major. Involves placement in public or private enterprise, supervision, and evaluation for credit by faculty and employer.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

English as a Second Language (ESL)

140. *ESL Academic Reading/Writing.* 3 Hr. For undergraduate (and graduate) international students. Develops the skills necessary to improve academic reading skills to write well-organized and self-edited essays in a variety of rhetorical modes.

240. *ESL Research and Writing.* 3 Hr. Provides undergraduate and graduate international students with the skills, strategies, and procedures necessary for researching a topic and writing a well-organized and logical research paper.

250. *Speaking and Listening.* 3 Hr. For undergraduate and graduate international students. Provides guidance and practice in general and academic speaking and listening skills and improves oral comprehensibility through pronunciation activities.

293 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

350. *ITA Fluency.* 3 Hr. Designed for graduate students wishing to become International Teaching Assistants (ITAs) Course focuses on the characteristics of effective oral communication in English in order to improve SPEAK test scores and comprehensibility in the classroom.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

English Language and Literature (ENGL)

101. *Composition and Rhetoric.* I, II, S. 3 Hr. A course in writing non-fiction prose, principally the expository essay. Required of all bachelor's degree candidates unless the requirement is waived under regulations prevailing at the time of admission. (Note: Entering freshmen who score 18 or below on the ACT English (or 420 or below on the SAT verbal) may not register for ENGL 101 until they demonstrate requisite skills on the English department's Writing Placement Test. Because of anticipated revisions in SAT or ACT scores, these scores are subject to change. Students should contact the English department for more current information.)

102. *Composition and Rhetoric.* I, II, S. 3 Hr. PR: ENGL 101 or equiv. Writing college-level research papers based on argumentative models. Precision in documentation, bibliographies, usage, punctuation, and stylistics assumed. Required of all bachelor's degree candidates unless the requirement is waived under regulations prevailing at the time of admission.

111. *Introduction to Creative Writing.* I, II. 3 Hr. PR: ENGL 101 and ENGL 102 or equivalent. Practice in writing a sequence of structured exercises designed to enhance creative writing skills.

131. *Poetry and Drama.* I, II. 3 Hr. An introduction to the genres.

132. *Short Story and Novel.* I, II. 3 Hr. An introduction to the genres.

139. *Contemporary African Literature.* I, II. 3 Hr. A survey of contemporary African poetry, drama, and fiction.

154. *African American Literature.* I, II. 3 Hr. A historical introduction and survey from its beginnings to the present.

156. *Literature of Native America.* I, II. 3 Hr. A historical survey of Native American prose, poetry, song, and story from the beginning to the present.

199. *Orientation to English Studies.* 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities, and opportunities.

201. *Advanced Composition.* I, II. 3 Hr. PR: ENGL 101 and ENGL 102. Composition for students who wish to develop their expository and argumentative writing skills.

202. *Business and Professional Writing.* I, II. 3 Hr. PR: ENGL 101 and ENGL 102. Students will analyze different writing contexts, meet the needs of different audiences, and organize and present material in letters, memos, and reports. Includes some research, Internet components, and a review of style, grammar, and usage.

212. *Creative Writing: Fiction.* I, II. 3 Hr. An open enrollment introduction to the writing of fiction.

213. *Creative Writing: Poetry.* I, II. 3 Hr. An open enrollment introduction to the writing of poetry; practice in the basics of image, metaphor, line, form, sound, and voice.

214. *Creative Writing:* Non-Fiction. I, II. 3 Hr. Introductory course in the writing of non-fiction.

221. *The English Language.* I, II. 3 Hr. PR: ENGL 101 and sophomore standing. An introduction to language, its structure in the mind, and its use in the United States.

225. *Western World Literature.* I, II. 3 Hr. Selected readings in the canon of Western world literature, both ancient and modern.

226. *Non-Western World Literature.* I, II. 3 Hr. Selected readings in non-Western world literature, ancient and modern.

230. *Film Studies.* I, II. 3 Hr. Topics in the study of film, or film and literature, in a historical, theoretical, and/or cultural context.

231. *Prose.* I, II. 3 Hr. Study of prose genres, including autobiography, biography, travel narrative, and nature writing.

232. *Poetry.* I, II. 3 Hr. Appreciation and enjoyment of poems through critical and analytical reading. Studies in the various types of poetry, and of the language, imagery, and techniques of poetic expression.

233. *Short Story.* I, II. 3 Hr. The short story's structure, history, and contemporary forms.

234. *Drama.* I, II. 3 Hr. The drama's structure, history, and contemporary forms.

235. *Novel.* I, II. 3 Hr. The novel's structure, history, and contemporary forms.

236. *The Bible as Literature.* I, II. 3 Hr. Analysis of the themes, topics, and literary genres of the Old and New Testaments. Issues to be discussed include the unity of the text, the status of authorship, translation, and the depiction of God.

241. *American Literature 1.* I, II. 3 Hr. A historical introduction and survey from its beginnings to the mid-nineteenth century.

242. *American Literature 2.* I, II. 3 Hr. A historical introduction and survey from the mid-nineteenth century to the present.

251. *American Folklore and Culture.* I, II. 3 Hr. Introduction to folklore of the USA. Folklore and American culture. Subject groups vary but usually include Native Americans, early European settlers, African Americans, and 20th century immigrants.

252. *Appalachian Fiction.* I, II. 3 Hr. Reading of short stories, novels, and other narratives by Appalachian authors.

253. *Southern Writers.* I, II. 3 Hr. Twentieth-century Southern essayists, poets, short story writers, and novelists in relation to ideological background.

254. *African American Literature.* I, II. 3 Hr. Studies in the literature of African American authors, 1845 to the present.

255. *Multiethnic Literature.* I, II. 3 Hr. Literature by Americans of diverse ethnicities including, but not limited to, Asian Americans, Latinos, Native Americans, African Americans, and European Americans of various class/religious/regional backgrounds.

257. *Science Fiction and Fantasy.* I, II. 3 Hr. A study of the history and nature of science fiction from H. G. Wells to the present, with special attention to features of prose narration.

258. *Popular American Culture.* I, II. 3 Hr. A survey of modern popular American culture from 1940 to the present, with special emphasis on popular literature, music, television, movies, radio in its golden age, and comic books.

261. *British Literature 1.* I, II. 3 Hr. A historical introduction and survey from the Middle Ages through the eighteenth century.

262. *British Literature 2.* I, II. 3 Hr. A historical introduction and survey from the late eighteenth century to the present.

263. *Shakespeare 1.* I, II. 3 Hr. Several of Shakespeare's most important plays.

272. *Modern Literature.* I, II. 3 Hr. British and American poetry, drama, and fiction from 1900 to 1960.

273. *Contemporary Literature.* I, II. 3 Hr. An examination of the literature written since 1960 in England and America. Poetry, drama, and fiction. Selections will vary depending on the instructor.

285. *Images of Women in Literature.* I, II. 3 Hr. Representative literary works studied against a backdrop of social and historical documents to examine the effect of images of women in literature on the self-image of women today.

288. *Sexual Diversity in Literature and Film.* I, II. 3 Hr. Representation of lesbians, gay men, and bisexuals in literature and film.

293 A-Z. *Special Topics.* I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

302. *Editing.* I, II. 3 Hr. A comprehensive approach to editing, including the correctness and effectiveness of a document, information design, and editorial responsibility. Students gain a realistic perspective on workplace practice through real-world scenarios, case studies, and technological applications.

303. *Multimedia Writing.* I, II. 3 Hr. Study of communication and design issues in multimedia composition. Focuses on communication, creative expression, persuasion, interactivity, and rhetorical principles. Practice in composing multimedia documents such as on-line publications, interactive literary works, and tutorials.

305. *Scientific and Technical Writing.* I, II. 3 Hr. PR: ENGL 101 and ENGL 102. Writing for the scientific and technical professions. Description of a process and a complex idea; feasibility report; analysis of a technological innovation; communications; articles for trade and research journals.

306. *Topics in Humanities Computing.* I, II. 3 Hr. Topics include: literary studies (electronic publications, web-based interactive fiction, poetry, drama, nonfiction); creative writing in digital media, composition on-line, pedagogy, cultural studies of electronic media, on-line communications, language studies. Topics rotate; check with the instructor for current topic.

309. *Approaches to Teaching Composition.* I, II. 3 Hr. PR: ENGL 201. (May not be taken for both undergraduate and graduate credit.) Surveys attitudes toward and techniques of teaching writing in elementary and secondary schools. Provides experience in class with methods of teaching writing.

312. *Creative Writing Workshop: Fiction.* I, II. 3 Hr. PR: Grade of B or higher in ENGL 212. Advanced workshop in creative writing for students seriously engaged in writing fiction.

313. *Creative Writing Workshop: Poetry.* I, II. 3 Hr. PR: Grade of B or higher in ENGL 213. Advanced workshop in creative writing for students seriously engaged in the writing of a major group of poems.

314. *Creative Writing Workshop: Non-Fiction.* I, II. 3 Hr. PR: Grade of "B" or higher in ENGL 212 or ENGL 213 or ENGL 214. Advanced workshop in creative writing for students seriously engaged in the writing of nonfiction.

318. *Topics in Creative Writing.* II. 3 Hr. (May be repeated for a maximum of 9 hours.) Advanced work in creative writing; course content changes with genre: fiction, poetry, non-fiction.

321. *History of the English Language.* I, II. 3 Hr. Study of the nature of the language; questions of origins, language families, development, relationships of English as one of the Indo-European languages.

323. *Introduction to Old English.* I, II. 3 Hr. An introduction to the grammar of Old English in order to read texts in the language. After the basic grammar is mastered, students translate a selection of Old English prose texts and poems.

329. *Topics in the English Language.* I, II. 3 Hr. This course rotates a set of topics offering students field-specific approaches to the study of the English language. Students engage the language through active research paradigms focusing on the social context of the language.

331. *Topics in Genre.* I, II. 3 Hr. This variable-topic course will trace formal and thematic conventions in poetry, drama, prose fiction, and/or nonfiction.

342. *American Drama.* I, II. 3 Hr. Representative American dramas and history of theater in America.

343. *American Poetry.* I, II. 3 Hr. Major American poets of the nineteenth and twentieth centuries.

344. *Modern American Poetics.* I, II. 3 Hr. A close study of those poets who have shaped the aesthetics of contemporary American poetry.

345. *American Literature to 1800.* I, II. 3 Hr. Major genres, authors, themes, and topics in American literature, c. 1500 to 1800.

346. *American Literature 1800-1865.* I, II. 3 Hr. Surveys nineteenth-century antebellum American writing, including non-fiction traditions of Transcendentalism, abolition, and women's rights; romantic, sentimental, and gothic fiction; and poetry, including works by Dickinson and Whitman.

347. *American Literature 1865-1915.* I, II. 3 Hr. This course will follow the development of American literature, especially in the genres of fiction and poetry, roughly from the Civil War through the beginning of World War I.

348. *20th Century American Literature.* I, II. 3 Hr. Major genres, authors, themes, and topics in American literature from 1900 to 1999.

349. *Contemporary American Literature.* I, II. 3 Hr. Completes the American literature sequence with an examination of stories, novels, poetry, and drama (stage and screen) of the period from 1960 to present.

351. *Folk Literature.* I, II. 3 Hr. The folk ballad, its origin, history, and literary significance, based on Child's collection and on American ballad collections.

352. *Topics in Appalachian Studies.* I, II. 3 Hr. Studies of authors, genres, themes, or topics in Appalachian literature.

354. *Topics in African American Literature.* I, II. 3 Hr. This course examines a specific aspect of African American literature and/or culture. Topics vary from semester to semester.

356. *Topics in Native American Literature.* I, II. 3 Hr. Specialized topics course reflecting current trends and issues in Native American literature and culture. Subjects vary per semester.

360. *Literature of the Middle Ages.* I, II. 3 Hr. Literature of the period 1066-1485 in relation to the cultural transformations of the time. Course emphases may include (but are not limited to) Arthurian romance, the "mystery" plays, crusade narratives, political ballads, and women's writings.

361. *Chaucer.* I, II. 3 Hr. Early poems, *Troilus and Criseyde*, and *The Canterbury Tales.* In addition to an understanding and appreciation of Chaucer's works, the student is expected to acquire an adequate knowledge of Chaucer's language.

362. *Literature of the 16th Century.* I, II. 3 Hr. Studies from Caxton to Bacon, from Skelton to Shakespeare.

363. *Shakespeare 2.* I, II. 3 Hr. Advanced studies in Shakespeare's plays and non-dramatic poetry. Methodological emphases varying per semester, including textual, historical, dramaturgical, and postcolonial approaches.

364. *Literature of the 17th Century.* I, II. 3 Hr. Studies from Donne to Dryden.

365. *Milton.* I, II. 3 Hr. All of Milton's poems and a few selected prose works.

366. *Literature of the Eighteenth Century 1.* I, II. 3 Hr. Literature of the period 1660-1744 in relation to social, political, and religious movements of the time.

367. *Literature of the Eighteenth Century 2.* I, II. 3 Hr. Continuation of ENGL 366, covering the latter half of the century. May be taken independently of ENGL 366.

368. *The Romantic Movement.* I, II. 3 Hr. A survey of the works of the major British Romantic writers along with an introduction to works of scholarship in British Romanticism.

369. *Victorian Literature.* I, II. 3 Hr. Study of Victorian poets and prose writers with an emphasis on historical, political, and cultural issues. Representative authors may include: Tennyson, the Brownings, Arnold, Dickens, the Brontes, Eliot, and Hardy

371. *Modern British/Irish Literature.* I, II. 3 Hr. Studies in the late 19th- and 20th-century British and Irish literature, including the works of Yeats, Eliot, Joyce, Woolf, Auden, Beckett, Hughes, Churchill, and Heaney

372. *Commonwealth Literature.* I, II. 3 Hr. Fiction, poetry, and plays written by citizens of countries that are members of the British Commonwealth; for instance, Canada, New Zealand, Australia, and some Caribbean Islands.

373. *Contemporary British Literature.* I, II. 3 Hr. The poems, plays, and fiction read in this course reflect Britain's current multicultural makeup: among them, the North and the Republic of Ireland, Scotland, Wales, England, South Africa, Pakistan, and India.

374. *Postcolonial Literature.* I, II. 3 Hr. Various issues in postcolonial literature, including gender, nationalism, resistance, development, neocolonialism and diasporic identities. In addition, students will examine contemporary literary modes associated with the postcolonial project of revisionist history.

381. *Literary Criticism.* I, II. 3 Hr. Literary criticism from Aristotle to modern times.

382. *Contemporary Literary Theory.* I, II. 3 Hr. An introduction to the predominant schools of literary theory of the twentieth century, including psychoanalytic criticism, Marxist criticism, feminist criticism, deconstruction, postmodernism, and cultural studies.

383. *Introduction to Cultural Studies.* I, II. 3 Hr. Students will explore the ways in which we are all simultaneously users of and used by culture, and the ways in which cultural practices influence how we think, feel, and act in everyday life.

384. *Introduction to American Studies.* I, II. 3 Hr. This course introduces students to methodologies of studying American popular and mass cultures in the past and present. Topics may include film, literature, performance, music, economics, and technology.

385. *American Women Writers.* I, II. 3 Hr. Studies in the literature of American women writers. Syllabi may vary per term; topics may include Jewish American women writers, women writers of the suffrage movement, and 20th century American women writers.

386. *British Women Writers.* I, II. 3 Hr. This course examines fiction, poems, essays, and drama written by British women writers, beginning with the fourteenth-century author Margery Kempe and continuing into the late twentieth century with Nadine Gordimer.

387. *Topics in Women's Literature.* I, II. 3 Hr. Syllabus will vary per term. Topics include women writers outside of Great Britain and the United States; comparative women writers; women's writing on a particular theme or topic.

388. *Topics in Gay/Lesbian Studies.* I, II. 3 Hr. Specialized topics courses reflecting current trends in studies of gay/lesbian history, literature, culture, and theory. Subjects will be taught on a rotation.

405. *Fiction for Adolescents.* 3 Hr. I, II. A survey of fiction for adolescents with special attention to literary theories that assist its interpretation.

418. *Creative Writing Seminar.* I, II. 3 Hr. PR: 9 Hr. of creative writing and Consent. Individual projects in creative writing pursued in a workshop setting.

490. *Teaching Practicum.* I, II. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development. Note: Offered for grade if taken for capstone.

493 A-Z. *Special Topics.* I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

495. *Independent Study.* I, II. 1-6 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* I, II. 3 Hr. PR: Consent. Careful investigation of and independent research on a topic approved in advance by the course instructor.

498 A-Z. *Honors.* I, II. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Entomology (ENTO)

301 *Apiculture.* II. 3 Hr. PR: BIOL 101 and BIOL 103 and BIOL 102 and BIOL 104. Development, physiology, and behavior of the honey bee with emphasis on colony management, pollination of crops, diseases of bees, properties of honey and beeswax, and marketing of honey bee products. (Offered in spring of odd years.)

302. *Apiculture Laboratory.* II. 1 Hr. PR or Conc: ENTO 301. Identification and anatomy of honey bees, assembly and use of beekeeping equipment, field management of honey bees, examination for diseases and pests, production of queens and nuclei. (1 - 3 hr. lab.) (Offered in spring of odd years.)

404. *Principles of Entomology.* I. 4 Hr. PR: BIOL 101 and BIOL 103 and BIOL 102 and BIOL 104 or equiv. Basic course dealing with the anatomy, morphology, physiology, reproduction, systematics, ecology, and management of insects.

410. *Insect Pests in the Agroecosystems.* I. 4 Hr. PR: ENTO 404 or Consent. Life cycle, damage, and economic impact of pestiferous insects in the agroecosystem. Included are insect pests of agricultural and ornamental plants, stored products, structures, and livestock. (3 hr. lec., 1 hr. lab.)

412. *Pest Management.* II. 4 Hr. PR: ENTO 404 or Consent. An in-depth look at current problems and solutions in controlling insect pests in an environmentally compatible manner. Management techniques include cultural, mechanical, physical, biological, regulatory, and chemical practices. (Also listed as ENVP 412.)

470. *Forest Pest Management.* II. 4 Hr. PR: FMAN 311 and (BIOL 101 and BIOL 103 and PLSC 206) or (BIOL 115 and BIOL 117). Relationship of insects and disease organisms to the forest ecosystem; recognition of agents that affect forest health; management strategies for regulating their damage. (Cross-listed with PPTH 470.)

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Environmental Microbiology (ENVM)

241. *General Microbiology.* I, II, S. 4 Hr. PR: CHEM 115. Introductory morphological, cultural, and physiological characteristics of microorganisms; application of microbiology to agriculture, home economics, and health.

401. *Environmental Microbiology.* II. 4 Hr. PR: ENVM 241 or Consent. Microbiology as applied to soil, water, wastewater, sewage, air, and the general environment. Occurrence, distribution, ecology, and detection of microorganisms in these environments. (Also listed as ENVP 401.)

420. *Soil Microbiology.* I. 3 Hr. PR: ENVM 241. Microbiology and biochemistry of the soil environment. Occurrence, distribution, ecology, and detection of micro-organisms in soil. (Offered in fall of even years. Also listed as AGRN 420 and ENVP 420.)

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Environmental Protection (ENVP)

155. *Elements of Environmental Protection.* II. 3 Hr. An introduction to land and water resources and their management and protection. An evaluation of the relationships between human activities and natural environments and the interaction between natural resource utilization and development.

355. *Environmental Sampling and Analysis.* I. 3 Hr. PR: BIOL 101 and BIOL 102 and BIOL 103 and BIOL 104 and CHEM 115 and CHEM 116. Introduction to environmental sampling methods and analysis. Lecture and hands-on experience will include sampling plan development, sample point selection, sampling equipment use, containers and preservatives, sample analysis, chain-of-custody, and protective equipment.

401. *Environmental Microbiology.* II. 4 Hr. PR: ENVM 241 or Consent. Microbiology as applied to soil, water, wastewater, sewage, air, and the general environment. Occurrence, distribution, ecology, detection of microorganisms in these environments. (Also listed as ENVM 401.)

412. *Pest Management.* II. 3 Hr. PR: ENTO 404 or Consent. An in-depth look at current problems and solution in controlling insect pests in an environmentally compatible manner. Management techniques include cultural, mechanical, physical, biological, regulatory, and chemical practices. (3 hr. lec.) (Also listed as ENTO 412.)

420. *Soil Microbiology*. I. 3 Hr. PR: ENVM 241. Microbiology and biochemistry of the soil environment. Occurrence, distribution, ecology, and detection of micro organisms in soil. (Offered in fall of even years. Also listed as ENVM 420 and AGRN 420.)

425. *Environmental Soil Management*. I. 3 Hr. PR: AGRN 202 and AGRN 203. This course provides a foundation for utilizing creative solutions and technical knowledge in preserving and enhancing soil and water quality. Soil conservation, precision agriculture, and nutrient management for protection of soil and water quality are covered. (Also listed as AGRN 425)

451. *Weed Control*. I. 3 Hr. PR: PLSC 206 or Consent. Fundamental principles of weed control. Recommended control measures for and identification of common weeds. (2 hr. lec., 1 hr. lab.) (Offered in fall of odd years. Also listed as AGRN 451.)

455. *Reclamation of Disturbed Soils*. 3 Hr. PR: Junior standing or above. Principles of soil science, geology, hydrology, and engineering will be applied to surface mine planning, overburden handling during mining, soil replacement and amendments, revegetation practices, acid mine drainage control and treatment, hazardous wastes, and land management of disturbed areas. Field trip required. (Also listed as AGRN 455.)

460. *Environmental Impact Assessment*. I. 3 Hr. PR: BIOL 101 and BIOL 102 and BIOL 103 and BIOL 104 and CHEM 115 and CHEM 116. Application of physical, biological, and social science principles to assess environmental impacts. Review and prepare environmental assessments, permits, site assessments, and ecological risk assessments for environmental decision-making.

Exercise Physiology (EXPH)

240. *Medical Terminology*. 1 Hr. PR: Sophomore standing. The study of medical language with special emphasis given to terms used in the field of exercise physiology.

293 A-Z. *Special Topics*. I, II, S. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

364. *Kinesiology*. I, II. 3 Hr. PR: Junior standing; consent. Anatomical, mechanical, and musculoskeletal study of the human body as the instrument for efficient performance of motor activities. (Laboratory work included.)

365. *Exercise Physiology 1*. I, II, S. 3 Hr. PR: Junior standing; consent. The study of the functioning of body systems during exercise and the acute and chronic adaptations that occur from exercise stress.

368. *Lab Techniques and Methods*. I, II. 3 Hr. PR: Junior standing; EXPH 364 and EXPH 365; consent. Techniques and methods for designing and conducting exercise programs for asymptomatic, healthy individuals.

450. *Theory of Aquatic Therapy*. 3 Hr. PR: Junior standing or consent. An introduction to aquatic therapy. It covers the historical perspective, biophysiologic response to water immersion, and application of aquatic therapy to specific physical diagnoses.

451. *Application of Aquatic Therapy*. 3 Hr. PR: Junior standing and consent. Design and implementation of aquatic exercise prescriptions to meet rehabilitation goals. Aquatic therapy techniques will be demonstrated and practiced.

452. *Aquatic Therapy Facility Management*. 3 Hr. PR: Junior standing and EXPH 451 and consent. Facility design, water chemistry, water safety, and aquatic programming for special populations including rehabilitation, community re-entry, and wellness programs in a comprehensive continuum of care.

460. *Pathophysiology*. 3 Hr. PR: EXPH 365 and Junior standing. CoReq: PHYS 241. The study of disease etiology and the physiological changes that occur from disease, with special emphasis given to the use of exercise in disease prevention and therapy.

470. *Research Methods*. 3 Hr. PR: Senior standing. CoReq: EXPH 496. The study of the scientific method and research design as it relates to the field of exercise physiology and preventive medicine.

490. *Teaching Practicum*. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience*. I, II, S. Variable credit 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experimental learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development. (Internship.)

493 A-Z. *Special Topics*. I, II, S. 1-6 Hr. PR. Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar*. I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis*. I, II, S. 1-3 Hr. PR: Consent.

497. *Research*. I, II, S. 1-6 Hr. Independent research projects.

498. *Honors*. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Family and Consumer Sciences (F&CS)

101. *Introduction to Family Resources.* 1 Hr.

265. *Family Resource Management.* I, II. 3 Hr. Develops an understanding of the systems approach to individual and family resource management with a focus on key concepts, processes, and contributing factors. Time management and money management are dealt with in depth.

293 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

381. *Issues in Consumer Sciences.* I, II. 3 Hr. PR: Senior standing or Consent. Examines the process of socialization for the professional role within the context of social change and current trends affecting families in the U.S. and overseas.

382. *Disabilities and the Family.* 3 Hr. Designed to familiarize students with developmental disabilities and their impact on families. Interdisciplinary, family-centered care is emphasized, along with how to access resources to meet the needs of children and families.

385. *Disability and Society.* 3 Hr. Provides a global, interdisciplinary overview of issues and policies that are the concern of individuals with disabilities (e.g., public policy, health-related issues, employment, and social benefits.)

486. *Capstone Portfolio: Disability.* 1 Hr. PR: F&CS 382 and F&CS 385. This course is the capstone experience for the Interdisciplinary Certificate Program in Disability Studies. It consists of accumulated work effort in the area culminating in a written essay and an oral presentation before a committee. (Grading will be Pass/Fail.)

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491 A-Z. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

Finance (FIN)

305. *Intermediate Finance.* 3 Hr. PR: BCOR 340. Continuation of BCOR 340; use of computers to help solve extended problems and/or short cases.

310. *Investments.* 3 Hr. PR: BCOR 340. Investment analysis and management for the individual and the financial institution.

330. *Financial Institutions.* 3 Hr. PR or CONC: BCOR 340 and Consent. The role of financial institutions in our nation's financial markets and the economy. Analysis of interest rate, financial markets, and federal revenue policy.

340. *Real Estate.* 3 Hr. Principles and practices of real estate business.

350. *General Insurance.* 3 Hr. PR: (ACCT 202 and ECON 202 and ECON 225 and ENGL 102) and (MATH 150 or MATH 155.) Theory of risk and its application to insurance; principles underlying insurance-life, property, casualty, fire, and surety.

410. *Security Analysis and Portfolio Management.* 3 Hr. PR: FIN 310. The systematic selection, assessment, and ranking of corporate securities in a portfolio framework through a synthesis of fundamental analysis, technical analysis, and the random walk perspective.

451. *Working Capital Management.* 3 Hr. PR: BCOR 340 and ECON 225 and PR or Conc: FIN 305. Management of current assets and liabilities. Topics include the management of cash, marketable securities, accounts receivable, inventories, trade accounts payable, and short-term bank borrowings. Decision models are used extensively.

452. *Employee Benefit Plans.* 3 Hr. PR: FIN 350. Use, design, and regulation of group life insurance, health care, and pensions, including their federal tax consequences. Study of the available contracts in each area and financing alternatives and practices.

453. *Life Insurance and Estate Planning.* 3 Hr. PR: FIN 350. Principles of life and health insurance protection; application of life insurance to individual, family, business, and societal needs; study of trusts, wills, and estates, integrating of income programming into estate management.

454. *Property and Liability Insurance.* 3 Hr. PR: FIN 350. Study of the use and production of property and liability insurance, including evaluation of insurance contracts and current insurance practices; legal and regulatory environment affecting use and production of insurance.

455. *Risk Management.* 3 Hr. PR: FIN 350. Transferable risks with which the entrepreneur must deal. Emphasis on the process by which decisions are made for handling these risks, including an examination of contributions and limitations of insurance system.

456. *Social Insurance.* 3 Hr. PR: FIN 350. Our social and political efforts to provide economic security for the general public. An examination of the parallel developments of private insurance.

460. *Bank Management.* 3 Hr. PR: BCOR 340 and PR or Conc: FIN 305. (May not be taken for both undergraduate and graduate credit.) Management of bank funds. Principles of organization lending and investment. Policy relationships to bank productivity, organization, and profitability; preparation of financial reports; management of a simulated bank in a changing environment.

461. *Advanced Bank Management.* 3 Hr. PR: FIN 460. An advanced course in commercial banking involving problems of management of the money position, loan and investment portfolio, and capital adequacy. The student simulates actual bank operation, conducts case studies, and analyzes bank performance.

470. *Advanced Finance.* 3 Hr. PR: FIN 305, and PR or Conc: BCOR 460. Integrative course in finance to be taken during the final semester before graduation.

480. *International Finance.* 3 Hr. PR: BCOR 340. Course extends standard corporate finance concepts to the global arena, helping to understand the additional opportunities and challenges faced by a global firm.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Food Science (FDSC)

307. *Milk and Public Health.* 3 Hr. Food value of milk and its production and processing in relation to public health. (2 hr. lec., 3 hr. lab.) (Offered in fall of odd years.)

312. *Dairy Technology.* 3 Hr. Introductory. Composition and properties of milk and milk products, butterfat testing, manufacture of dairy products. (2 hr. lec., 3 hr. lab.) (Offered in spring of odd years.)

330. *Milk Production and Frozen Desserts.* 4 Hr. Assembling, processing, packaging, storing, and merchandising dairy products. (3 hr. lec., 3 hr. lab.) (Offered in fall of even years.)

334. *Judging Dairy Products.* II. 2 Hr. A laboratory course in evaluating and judging dairy products. Two 75-minute labs.

365. *Meat Technology.* I. 3 Hr. Emphasis on techniques of slaughtering, cutting, breaking, manufacturing, inspecting, and grading beef, veal, pork, lamb, and poultry meat and muscle food products; meat plant design, technology, sanitation, operation, and management.

368. *Meat Science.* 3 Hr. PR: FDSC 365 and BIOL 102 and BIOL 104 and CHEM 112 or equiv. Emphasis on basic physical, chemical, anatomical, and nutritional characteristics of muscle foods; methods of analysis and quality assurance in processing muscle foods. (Offered in spring of odd years.)

470. *Advanced Meat Science.* 3 Hr. PR: FDSC 368. Theoretical and experimental aspects of meat science, meat product/process systems, and the quantitative biology of muscle systems used for food. (Offered in spring of even years.)

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent study, reading, or research.

Foreign Literature in Translation (FLIT)

113. *Introduction to French Literature.* 3 Hr. Major writers and representative movements in French literature from its beginning to the present.

114. *Introduction to German Literature.* 3 Hr. Survey of German literature with selected readings of prose, poetry, and drama from the Enlightenment to the present.

115. *Introduction to Spanish Literature.* 3 Hr. Reading and discussion of representative Spanish novels, plays, and epic poetry from the Middle Ages to the twentieth century. Special emphasis on Don Quixote, its roots and its place in the development of Western culture.

116. *Introduction to Latin American Literature.* 3 Hr. Reading and discussion of representative works of twentieth century Latin American writers.

117. *Introduction to Russian Literature.* 3 Hr. Major writers and representative movements in Russian literature from its beginning to the present.

118. *Introduction to Italian Literature.* 3 Hr. Italian literary masterpieces will be examined in historical perspective and in relation to the European mainstream.

125. *Spanish Civilization and Literature.* 3 Hr. This course provides students with an understanding of and appreciation for Spanish literature as it relates to the social, historical, and cultural developments within Spain from the sixteenth century to today.

205. *Greek Literature in Translation 1.* 3 Hr.

206. *Greek Literature in Translation 2.* 3 Hr.

211. *Italian Literature in Translation 1.* 3 Hr. Selected Italian works from the twelfth century to the end of the eighteenth century. Readings and discussion in English.

212. *Italian Literature in Translation 2.* 3 Hr. Selected Italian work from the nineteenth and the twentieth centuries. Readings and discussion in English.

215. *African Women Writers.* 3 Hr. Selected works by African women writers.

221. *Chinese Literature in Translation.* 3 Hr. Survey of selected works of Chinese literature form ancient times through the eighteenth century.

222. *Japanese Literature in Translation.* 3 Hr. Survey of selected works of Japanese literature from ancient period to the mid-nineteenth century and an introduction to a few works of the modern period.

225. *Latin Literature in Translation 1.* 3 Hr.

226. *Latin Literature in Translation 2.* 3 Hr.

231. *German Literature in Translation 1.* 3 Hr. Selected German works from 800 A.D. to the period of Naturalism. Readings and discussion in English.

232. *German Literature in Translation 2.* 3 Hr. Selected German works from the period of Naturalism to the present. Readings and discussion in English.

241. *Spanish Literature in Translation 1.* 3 Hr. Selected Spanish works from the twelfth century to the end of the eighteenth century. Readings and discussion in English.

242. *Spanish Literature in Translation 2.* 3 Hr. Selected Spanish works from the nineteenth and the twentieth centuries. Readings and discussion in English.

243. *Women Writers of Spain.* 3 Hr. Major women writers of Spain from the earliest extant manuscripts to the present; focus on 20th century works. Spanish majors will read selections in the original.

251. *Spanish American Literature in Translation 1.* 3 Hr. Selected Spanish American works from the sixteenth century to the end of the nineteenth century. Readings and discussion in English.

252. *Spanish American Literature in Translation 2.* 3 Hr. Selected Spanish American works from the nineteenth and the twentieth centuries. Readings and discussion in English.

261. *French Literature in Translation 1.* 3 Hr. Selected French works from the Middle Ages to the end of the eighteenth century. Readings and discussion in English.

262. *French Literature in Translation 2.* 3 Hr. Selected French works from the beginning of the nineteenth century to the present. Readings and discussion in English.

263. *French Women Writers.* 3 Hr. Selected works of French women writers. 3 Hr. lec.

266. *Francophone Literature in Translation.* 3 Hr. Works by French-speaking authors from Africa and the Caribbean. French majors will read selections in the original.

271. *Brazilian Literature in Translation.* 3 Hr. Survey of Brazilian literary masterworks in English translation concentrating heavily on prose forms (novel, novelette, short story, play) dating from the mid-nineteenth century.

273. *Russian Literature in Translation 1.* 3 Hr. Major works of Russian authors from the beginning to 1880, including those of Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, and Tolstoy. Russian major will read selections in the original.

274. *Russian Literature in Translation 2.* 3 Hr. Continuation of FLIT 188. Major literature of Russia/Soviet Union from 1880 to the present. Russian majors will read selections in the original.

293 A-Z. *Special Topics.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

433. *Weimar Cinema.* 3 Hr. A study of representative German films from the years 1919-1932. (May be crosslisted with GER 433.)

434. *Fascism and Film.* 3 Hr. A study of representative German films from the years 1919-1945. (May be crosslisted with GER 434.)

435. *The New German Cinema.* 3 Hr. A study of representative German films from 1962 to the present. (May be crosslisted with GER 435.)

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Forensic Identification Program (FIDP)

201. *Introduction to Forensic Identification.* 3 Hr. A survey course of the competencies required to successfully complete the Forensic Identification Program including overview of the history and components of fingerprint classification systems, newest identification technologies and skills, insight into personal/career characteristics.

301. *Science/Technology of Fingerprint Identification 1.* 3 Hr. Introduces basics of fingerprint analysis and comparisons. Focuses on basic patterns used in fingerprint comparisons and classifications of each fingerprint type, including Henry, National Crime Information Center, Integrated Automated Fingerprint Identification System pattern classification codes.

302. *Crime Scene Investigation 1.* 3 Hr. An introductory course providing basic competencies required for crime scene examiners. The course will focus on developing a consistent approach to the processing of a crime scene with a major focus on recovery/processing evidence.

304. *Latent Fingerprint.* 3 Hr. PR: FIDP 301. A course designed to teach identification techniques used in fingerprint development for processing crime scenes and evidence for latent prints, focusing on latent print development and preservation, including crime scene processing and blood prints.

386. *Forensic Identification Internship.* 6-9 Hr. PR: FIDP 201 and FIDP 301 and FIDP 302 and FIDP 304 and must preregisteer and have consent of department field work coordinator. A full-time supervised field experience providing a setting for students to increase their professional effectiveness as a forensic identification examiner while dealing with relevant issues and concerns while functioning within an ethical framework

402. *Crime Scene Investigation 2.* 3 Hr. PR: FIDP 302. An extension of FIDP 302. This course will outline procedures for collection of biological and trace evidence using scientific and practical methods of securing, collecting, analyzing this evidence, in accordance with known standards.

404. *Law and Evidence.* 3 Hr. This course presents a comprehensive review of criminal law relating to evidence in court cases and the student's ability to relate legal precedents to procedures in collecting, processing, and securing evidence used in criminal cases.

406. *Testimony and Moot Court.* 3 Hr. A skills intensive course that combines in-class instruction with practical experience in the area of court testimony, legal writing presentation, and creation and presentation of exhibits in an actual court setting.

408. *Forensic Journal Club.* 1 Hr. Familianze students with primary forensic literature including original research papers, legal documentation, and articles from professional publications by conducting a literature search on a topic and preparing and presenting an analysis to the class.

409. *Trace Evidence/Blood Splatter.* 3 Hr. Violent crimes frequently produce evidence such as bloodstains and related trace evidence. Scientific analyses of trace evidence and blood patterns at crime scene investigations and their applications in solving crimes.

410. *Forensic Capstone.* 6 Hr. An inquiry-based experience, which culminates the four-year academic program for forensic identification undergraduate students. Students will work in teams on forensic research projects and critically evaluate a series of speakers presenting relecant forensic talks.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent (may be repeated up to a maximum of 18 hours). Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* I, II, S. Variable 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

Forest Hydrology (FHYD)

444. *Watershed Management.* II. 3 Hr. PR: FMAN 212 and FMAN 311. (Primarily for forest management majors.) Influences of silvicultural practices and forest management activities on the hydrology of forested catchments.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent study, reading, or research.

Forest Management (FMAN)

212. *Forest Ecology.* I, II. 3 Hr. PR: FOR 205. Forest and environment factors; site and type characteristics.

222. *Forest Mensuration.* II. 4 Hr. PR: MATH 155 and STAT 211. Estimating volume and growth of trees and forest stands with emphasis on the mathematical and statistical techniques involved. Laboratories include practical field experience.

251. *Forest Fire Protection.* I. 2 Hr. Prevention, detection, and control of wildfires. Forest fuels, fire weather, and wildfire behavior. Use of fire for forest management purposes.

311. *Silvicultural Systems.* I. 4 Hr. PR: FOR 205 and ((FMAN 212 and FMAN 322) or WMAN 313)). The theory and practice of controlling forest stand establishment, composition, structure, and growth. Systems include: reproduction methods, release operations, and intermediate treatments.

316. *Forest Genetics and Tree Improvement.* II. 3 Hr. Forest genetic principles and their application to forest tree improvement, including crossing methods, selection systems, and other techniques.

322. *Advanced Forest Measurements.* I. 3 Hr. PR: FMAN 322 or equivalent. Measurement and computer simulation of forest growth; principles of growth and yield; statistical methods applied to forest measurement problems.

330. *Principles of Forestry Economics.* II. 4 Hr. PR: (ECON 201 or ARE 150) and ECON 202. Production, distribution, and use of forest goods and services. Emphasis on methods and problem solving techniques in the economic aspects of forestry.

332. *Farm Woods Management.* II. 3 Hr. Students majoring in forest resource management and wood industry may not take this course for credit. Characteristics of forest trees; management of farm woods for timber, wildlife, watershed protection, and recreation; measuring and marketing farm timber; plantation establishment.

400. *Forest Resources Management Field Practice.* S. 6 Hr. PR: CE 200 and FMAN 322. (Course will be taught during five consecutive six-day weeks.) Application and study of forest management practices with emphasis on field problems, including a one-week trip to observe forestry outside the Appalachian hardwood region.

413. *Regional Silviculture.* I. 2 Hr. PR: Forestry major or Consent, FMAN 212; PR or Conc: FMAN 311. Major forest types of the United States: their composition, management, problems, and silvicultural treatment.

433. *Forest Management.* I. 3 Hr. PR: FMAN 400 and FMAN 311 and FMAN 330. Principles of sustained yield forest management: organization of forest areas, selection of management objectives, application of silvicultural systems, and regulation of cut. Principles of sustainable forestry and ecosystem management.

434. *Forest Resources Management Planning.* II. 3 Hr. PR: FMAN 322 and FMAN 400 and FMAN 311 and PR or Conc: (ENTO 470 or PPTH 470) and FMAN 330. Integrated planning of long-term management of forest resources. Development of a management plan for an actual forest tract. Emphasis on biological, social, economic, and ethical considerations in decision-making.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or pnvate enterprise for professional competence development.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent study, reading, or research.

Forestry (FOR)

101. *Careers in Natural Resources Management.* I. 1 Hr (Required only for students who rank as freshman in the Division of Forestry.) An introduction to professional activities in forest resources management, recreation and parks management, wildlife and fisheries management, and wood science and utilization. Survey of major issues in natural resources management and conservation.

140. *West Virginia's Natural Resources.* I, II, S. 3 Hr. Survey of policies and practices in development and use of soil, water, forest, wildlife, mineral, and human resources in West Virginia.

205. *Dendrology.* I. 3 Hr. Classification and silvical characteristics of North American forest trees.

210. *Forest Meterology.* II. 3 Hr. PR: MATH 126 or MATH 128 or Consent. Introduction to meteorology and climatology with emphasis on forest/atmosphere interactions.

326. *Remote Sensing of Environment.* II. 2 Hr. PR: MATH 126 and MATH 128. Measurement and interpretation of natural resources and environment from photography and radar, infrared, and microwave imagery.

410. *Biometeorology.* II. 4 Hr. PR: Consent. A description of the physical environment of plants and its effect on growth, its modification for increasing yield, and for plant protection against extreme atmospheric conditions.

420. *Forest Policy and Administration.* I, II. 3 Hr. PR: Upperclass forestry major or Consent. Forest policy in the United States; important federal and state laws; administration of public and private forests; problems in multiple-use forestry.

425. *Global Forest Resources.* II. 3 Hr. Significance of renewable natural resources on a global scale and the ecological, economic, and social contexts in which they are managed. Emphasis is on world forest resources, including timber, wildlife, and social uses.

470 A-Z. *Problems in Forestry, Wood Science, Wildlife, or Recreation.* I, II, S. 1-4 Hr. PR: Forestry senior or Consent.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. Professional *Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

French (FRCH)

100. *Intensive Elementary French.* 6 Hr. PR: Score of F1 on placement test or no prior study of the language or departmental consent. Equivalent of FRCH 101 and 102 combined into one course.

101. *Elementary French 1.* 3 Hr. PR: Score of F1 on placement test or no prior study of the language or departmental consent. Introduction to the sound and writing systems of the language, with emphasis on listening, speaking, reading, and writing within an authentic cultural context. (Course presumes no prior knowledge of the language.)

102. *Elementary French 2.* 3 Hr. PR: FRCH 101 or a score of F2 on the placement test. Continuation of French 101.

200. *Intensive Intermediate French.* 6 Hr. PR: FRCH 102 or FRCH 100 or score of F3 Placement Test. FRCH 203 and FRCH 204 combined into one course. Capstone course for FRCH 101 through FRCH 204. Sequence and foundation for advanced French study. Emphasis on written and oral communication within an authentic cultural context.

203. *Intermediate French 1.* 3 Hr. PR: FRCH 102 or score of F3 on placement test.

204. *Intermediate French 2.* 3 Hr. PR: FRCH 203 or score of F4 on placement test. Capstone course for the FRCH 101 through FRCH 104 sequence and foundation for advanced French study. Emphasis on written and oral communication within an authentic cultural context.

293 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

301. *Language Through Civilization.* 3 Hr. PR: FRCH 204. Development of oral and written communicative skills in the context of the origins, development, and contributions of French and Francophone civilizations.

302. *Language Through Culture.* 3 Hr. PR: FRCH 204. Development of oral and written communicative skills in the context of contemporary values, institutions, and contributions of the French and Francophone world.

303. *Structure and Communication.* 3 Hr. PR: FRCH 204. Development of communicative competencies with emphasis on French language structures, speaking, and writing within an authentic cultural context.

304. *Advanced Readings.* 3 Hr. PR: FRCH 204 Development of communicative competencies with emphasis on authentic texts and documents from the French-speaking world.

331. *Survey of Literature 1.* 3 Hr. PR: Six hours of upper-division French. A cultural and historical survey from its beginnings to the end of the eighteenth century.

332. *Survey of Literature 2.* 3 Hr. PR: Six hours of upper-division French. A cultural and historical survey from the beginning of the nineteenth century to the present.

401. *Oral Expression.* 3 Hr. PR: Six hours of upper-division French. Intensive practice of oral skills with emphasis on discussion, debate, reciatin, reading aloud, etc.

402. *Phonetics and Pronunciation.* II. 3 Hr. PR: 12 Hr. of French or equiv.

431. *French Civilization.* 3 Hr. PR: 6 hours of upper-division french. A survey of major themes, movements, ideas, and figures in the development of French civilization from prehistory to the twentieth century.

432. *Contemporary Culture.* 3 Hr. PR: 12 Hours of French. French.

461. *Commercial French 1.* 3 Hr. PR: 6 Hours of upper-division French. Development of advanced speaking, reading, and writing skills appropriate for business contexts within the French-speaking world.

462. *Commercial French 2.* 3 Hr. PR: FRCH 461. Continuation of FRCH 461. Development of advanced speaking, reading, and writing skills appropriate for business contexts within the French-speaking world.

470. *Culture En Direct.* 3 Hr. PR: 6 hours of upper-division French. Study of French civilization through visits of cultural monuments and sites, and interaction with native informants in France. Themes covered include national and historical identity of France. Course offered only through study abroad.

471. *Communication En Direct.* 3 Hr. PR: 6 Hr. of upper-division French. Development of written and oral communication skills through a series of classroom activities and/or outside of class assignments. Coursework involves interaction with native informants. Course offered only through study abroad.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492. *Directed Study.* 1-6 Hr. Directed study, reading, and/or research.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* 1-3 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors and consent by the Honors director. Independent reading, study, or research.

General Engineering (ENGR)

190. *Teaching Practicum.* 1-3 Hr.

191 A-Z. *Special Topics.* I, II, S. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

194. *Professional Field Experience.* I, II, S. Variable credit 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experimental learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

195. *Seminar.* 1-3 Hr.

196. *Senior Thesis.* 1-3 Hr.

197. *Honors.* 1-3 Hr.

198. *Cooperative (Co-Op) Education Experience.* 0-18 Hr. PR: Consent. Prearranged co-op experience in student's major involves placement in public or private enterprise, supervision, and evaluation for credit by faculty and employer.

Genetics (GEN)

371. *Principles of Genetics.* I, II, S. 4 Hr. PR: 8 hr. biological science. The fundamentals of inheritance.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Geography (GEOG)

102. *World Regions.* 3 Hr. Comparison and relationships of world regions. Geographical perspectives of contemporary global problems. Developing regions contrasted with modernized regions and the consequences of their interactions.

106. *Physical Geography Laboratory.* 1 Hr. Coreq: GEOG 107.

107. *Physical Geography.* 3 Hr. Introduction to global environmental systems operating on the earth's surface, emphasizing weather and climate, soils, natural vegetation, and geomorphology, and examination of human interaction with these natural processes.

108. *Human Geography.* 3 Hr. Introduction to geographical dimension in human behavior and the human-altered landscape including social, demographic, economic, and political attributes of societies.

110. *Environmental Geoscience.* 3 Hr. Physical aspects of the earth with emphasis on natural resources, environmental degradation and hazards. Registration in GEOG 111 meets requirements for a 4-hr. credit in laboratory science. Also listed as GEOL 110. Students may not receive credit for GEOG 110 and GEOL 101.

111. *Environmental Geoscience Laboratory.* 1 Hr. PR or Conc: GEOG 110. Also listed as GEOL 110. Students may not receive credit for GEOG 111 and GEOL 102.

199. *Orientation to Geography.* 1 Hr. For majors, pre-majors, and potential majors; discussion of the discipline, curriculum requirements, areas of specialization, internships and career opportunities. (1 hr. lec.) (Pass/Fail only.)

201. *Map and Image Interpretation.* 3 Hr. PR: (GEOL 101 and GEOL 102) or (GEOL 110 and GEOL 111) or (GEOG 110 and GEOG 111). Analysis of physical and cultural landscapes using maps and remote sensing images. (1 hr. lec. 4 hr. lab.)

205. *Natural Resources.* 3 Hr. Introduces the concept of natural resources and surveys such topics as land, soil, rangeland, forests, water, atmosphere, minerals, and energy. Emphasis is on the United States within the context of the global environment.

207. *Climate and Environment.* 3 Hr. Examination of atmospheric processes and the impact of human activity on climate.

209. *Economic Geography.* 3 Hr. PR: GEOG 108. Examination of the world economy particularly the spatial patterns of agriculture, manufacturing, and services.

210. *Urban Geography.* 3 Hr. PR: GEOG 101 or GEOG 102 or GEOG 108. Introduction to the geography of the city incorporating consideration of urban systems and city-region linkages, patterns and processes of urban land use, the social geography of the city, and contemporary urban problems.

215. *Population Geography.* 3 Hr. PR: GEOG 107. Study of the geographic distribution of population and population characteristics including density, age, fertility, mortality, and settlement patterns. Problems of migration and population/resource issues are also covered, with an emphasis on developing countries.

240. *United States and Canada.* 3 Hr. Regional study of the United States and Canada emphasizing such geographic features as climate, natural vegetation, topography, natural resources, population distribution and trends, agriculture, manufacturing, transportation systems, and regional culture.

241. *Geography of Europe.* 3 Hr. PR: GEOG 108. Study of contemporary human and physical geography of Europe. Insight to political, economic, and social dimensions of transition in this region.

243. *Geography of Africa.* 3 Hr. Systematic and regional characteristics and geographic problems of political, social, and economic development.

249. *Geography of West Virginia and Appalachia.* 3 Hr. PR: GEOG 108 or Consent. Geographic analysis of the changing socio-economic activities and physical environment in West Virginia and Appalachia. Emphasis on the historical development of the state and region and contemporary spatial and social inequalities.

293 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

300. *Geographical Data Analysis.* 3 Hr. Quantitative techniques for collection, classification, and spatial analysis of geographical data with emphasis on map analysis and application of spatial statistics.

302. *Political Geography.* 3 Hr. Examines the interrelationship between politics and the environment, human territoriality, the political organization of space, geopolitical aspects of the nation-state, and international problems.

305. *Historical Geography of the United States Environment.* 3 Hr. Surveys natural resource exploitation and environmental alteration in the United States from 1600 to the present with consideration of changing natural resource, conservation, and environmental preceptions and policies.

309. *Industrial Geography.* 3 Hr. PR: GEOG 209 or Consent. Introduction to theories and concepts of industrial geography; emphasis on the interdependence of the world economy and spatial patterns of industrial restructuring; case studies from various industrial sectors and regions.

310. *Global Issues.* 3 Hr. PR: GEOG 102 or GEOG 108. Themes of spatial equity and justice in an increasingly interdependent world system. Contemporary issues concerning location, place, movement, and region.

321. *Geomorphology.* 3 Hr. PR: GEOL 101 and GEOL 102. An examination of earth-surface processes and landforms, with emphasis on environmental geomorphology, streams, floods, glaciers, and landslides. (Required field trip at student's expense; also listed as GEOL 321.)

350. *Introduction to Geographic Information Science.* 4 Hr. Geographic information science (GIS) in principle and practice. Spatial data handling in a computer environment: data, analysis, production, and information display for planning and decision making. (3 hr. lec., 1 hr. lab.)

361. *Cartography.* 3 Hr. An introduction to mapping from concepts to production, including historical developments, coordinate systems, projections, generalization, symbolization, map design, and computer-assisted mapping. (2 hr. lec., 1 hr. lab.)

390. *Geographical Perspectives on Energy.* 3 Hr. PR: Consent. A survey of the distribution of finite, renewable, and continuous energy resources and an investigation of the geographical patterns of energy consumption and energy flows. The policy implications of an unequal distribution of energy are evaluated.

411. *Rural and Regional Development.* 3 Hr. PR: GEOG 102 or GEOG 108. An investigation into rural and regional development in developed and underdeveloped regions. The relationship between development theory and policy is explored.

412. *Geography of Gender.* 3 Hr. PR: GEOG 108 or Consent. An exploration of how gender affects spatial patterns and processes. Theoretical and empirical aspects of feminism are analyzed including women and employment, Third World feminism, sexuality and space, and gender in academia.

415. *Environmental Systems in Geography.* 3 Hr. PR: GEOG 107, equivalent or Consent. A geographic analysis of the earth system emphasizing the interdependence and feedback mechanisms of the hydrologic cycle, ecosystems, and climate.

425. *Urban and Regional Planning.* 3 Hr. PR: GEOG 210 or POLS 220 or Consent. Explores concepts, techniques, and processes of physical and socioeconomic planning and their application to urban and regional problems.

452. *Geographic Information Science: Applications.* 3 Hr. PR: GEOG 350. GIS uses, needs, analysis, design, and implementation. Operational institutional and management topics of GIS for planning, locational decision making in business, government, and research contexts. (2 hr. lec., 1 hr. lab.) (Also listed as GEOL 452.)

453. *Geographic Information Science: Design and Implementation.* 3 Hr. PR: GEOG 350 and Consent. Geographic database design and implementation using contemporary GIS software.

455. *Introduction to Remote Sensing.* 3 Hr. Theory, technology and applications of photo-interpretation and digital image analysis of aerial photography and multispectral images. (2 hr. lec., 1 hr. lab.) (Also listed as GEOL 455.)

462. *Digital Cartography.* 3 Hr. PR: GEOG 361 or Consent. Computer-assisted mapping emphasizing the appropriate uses of software in thematic and topographic map design, annotation, symbolization, color, design, display, and reproduction.

466. *Field Camp.* 3-6 Hr. Observations, data gathering, and other field techniques for understanding physical environment, human geography, and culture; off-campus field experience. (3 hr. lec., 3 hr. field camp.)

485. *Methods of Geographic Research.* 3 Hr. PR: Consent. Geographic analysis as problem-solving activity. Practical experience in field techniques, library research, hypothesis formation and testing, and report preparation and presentation. Students will acquire skills in literary and numerical approaches to geographic data analysis.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492 A-Z. *Directed Study.* 1-3 Hr. Directed study, reading, and/or research.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. *Seminar.* 1-3 Hr. PR :Consent. Presentation and discussion of topics of mutual concern to students and faculty. GEOG 494A. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

497. *Research.* 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading may be S/U.)

498. *Honors.* 1-3 Hr. PR: Students in the Honors Program and Consent by the Honors director. Independent reading, study, or research.

499. *Honors Thesis.* 3-6 Hr. PR: Departmental Consent. Thesis proposal, writing, and defense for students admitted to the Honors Program.

Geology (GEOL)

101. *Planet Earth.* 3 Hr. Composition and structure of the Earth and the physical processes that change Earth's surface. GEOL 102 not required with GEOL 101. (Accompanied by registration in GEOL 102, class meets requirements for 4 hr. credit in a laboratory science in geology.) Students cannot receive credit for GEOL 101 and GEOL 110 or GEOG 110.

102. *Planet Earth Laboratory.* 1 Hr. PR or CONC: GEOL 101. Laboratory study of the earth using rocks, minerals, and maps. (2 hr. lab.) (Students cannot receive credit for GEOL 102 and GEOL 111 or GEOG 111.)

103. *Earth Through Time.* 3 Hr. PR: GEOL 101 or GEOL 110 or GEOG 110. Evolution of the Earth and its inhabitants. (Accompanied by registration in GEOL 104, class meets requirements for 4 hr. credit in a laboratory science in geology.)

104. *Earth Through Time Laboratory.* 1 Hr. PR or CONC: GEOL 103. Laboratory study of sedimentary rocks, fossils, and geologic maps and their use in interpreting Earth history. (2 hr. lab.)

110. *Environmental Geoscience.* 3 Hr. Physical aspects of the Earth with emphasis on natural resources, environmental degradation and hazards. (Accompanied by GEOL 111 meets requirements for a 4 hr. credit in laboratory science.) (Also listed as GEOG 110; students may not receive credit for GEOL 110 and GEOG 110).

111. *Environmental Geoscience Laboratory.* 1 Hr. PR or CONC: GEOL 110. (Also listed as GEOG 110; students may not receive credit for GEOG 111 and GEOL 102).

200. *Geology for Environmental Scientists.* 4 Hr. PR: (GEOL 110 and GEOL 111) or (GEOG 110 and GEOG 111) or (GEOL 101 and GEOL 102 and GEOL 103 and GEOL 104). Fundamentals of mineralogy, sedimentation, stratigraphy, petrology, and structural geology needed by environmental scientists to understand earth materials. (Required field trips partial student expense.) (3 hr. lec., 1 hr. lab.)

201. *Geologic Interpretation.* 3 Hr. PR: (GEOL 101 and GEOL 102) or (GEOL 110 and GEOL 111) or (GEOG 110 and GEOG 111). Interpretation of geology and earth history from topographic maps, geologic maps, and remote sensing. (1 hr. lec., 4 hr. lab.) (Can only be used as a geology B.S. elective when taken before GEOL 341.)

203. *Physical Oceanography.* 3 Hr. (Not open to upper division geology majors.) The geography and geology of ocean basins and margins, the chemical and physical properties of sea water, and the examination of the source and location of resources in the sea.

230. *Fossils and Evolution.* 3 Hr. PR: GEOL 101 or BIOL 101. Evolutionary history of plants, marine invertebrates, fish, amphibians, reptiles, dinosaurs, birds, and mammals; emphasis on unique contribution of fossil record to evolutionary theory. (2 hr. lec., 1 hr. lab.) (Credit cannot be obtained for both GEOL 103 and GEOL 230.)

284. *Mineralogy.* 3 Hr. PR: GEOL 101 and GEOL 102 and PR or CONC: CHEM 111 or CHEM 115. Elements of crystallography and the systematic study of minerals, identification of minerals in hand specimens according to physical properties. (Required weekend field trip covered by the lab fee.)

285. *Introductory Petrology.* 3 Hr. PR: GEOL 284. Introduction to the study of igneous, sedimentary, and metamorphic rocks, including mineralogy, processes of formation, tectonic setting, and description and identification of rocks in hand specimens. (Required weekend field trip. Students will be required to pay a portion of the expenses.)

311. *Stratigraphy and Sedimentation.* 3 Hr. PR: GEOL 103 and GEOL 104 and GEOL 285 and GEOL 321. Study of sediments and sedimentary rocks with an emphasis on the analysis of facies. (Required field trips at student's expense.)

321. *Geomorphology.* 3 Hr. PR: (GEOL 101 and GEOL 102) or (GEOL 110 and GEOL 111) or (GEOG 110 and GEOG 111). An examination of earth-surface processes and landforms, with emphasis on environmental geomorphology, streams, floods, glaciers, and landslides. (Required field trip at student's expense; also listed as GEOG 321.)

331. *Paleontology.* 3 Hr. PR: GEOL 103 and GEOL 104 and STAT 211. Uses of paleontologic data in geology; biostratigraphy, paleoecology, evolution, extinction, and biogeography; lab emphasis on identification and utilization of marine invertebrate fossils. (Required weekend field trip at student's expense.)

341. *Structural Geology.* 3 Hr. PR: GEOL 103 and GEOL 104 and GEOL 284 and GEOL 285 and PHYS 101. Introduction to rock deformation processes and the interpretation of geologic structure, with applications to the structure and tectonic evolution of the Appalachian Mountains. (Several one-day field trips required.)

342. *Structural Geology for Engineers.* 3 Hr. PR: GEOL 101 and GEOL 102 and PHYS 111. Introduction to rock deformation processes and the development and interpretation of geologic structures. (Several one-day field trips required.)

351. *Geomathematics.* 3 Hr. PR: GEOL 101 and (MATH 150 or MATH 155). Mathematical methods and applications in geology, geochemistry, geophysics, and environmental science. Review of integral calculus, differential equations, and non-linear systems. Use of computers as geological problem-solving tools.

365. *Environmental Geology.* 3 Hr. PR or CONC: GEOL 321. Principles, practice, and case histories in application of earth science to environmental problems. Includes: water quality; landslides; subsidence; waste disposal; legal aspects; and geological aspects of land-use planning. (Field trips and independent field project required.)

400. *Environmental Practicum.* 4 Hr. PR: GEOL 200. Practical experience in collecting and evaluating data required to address the complex environmental issues facing Eenvironmental geoscientists. (Required field trip during spring break).

401. *Physical Geology for Teachers.* 3 Hr. PR: High school teaching certificate and Consent. (Credit cannot be obtained for both GEOL 401 and GEOL 101.) Composition and structure of earth and the geologic processes which shape its surface.

404. *Appalachian Geology Field Camp.* S. 6 Hr. PR: GEOL 285 and GEOL 341 and GEOL 311 and Consent. Practical experience in detailed geological field procedures and mapping. (Living expense in addition to tuition must be paid at time of registration.)

411. *Carbonate Sedimentation of Florida.* 2 Hr. PR: GEOL 101 and GEOL 102 and Consent. Field trip to the Florida Keys to study origin and development of coral reefs and related carbonate sediments. (Transportation, room and board, boat charter, and other misc. costs at student's expense.)

435. *Introductory Paleobotany.* 4 Hr. PR: GEOL 103. (Required Saturday field trips at student's expense.) Resume of development of principal plant groups through the ages, present distribution, mode of occurrence and index species, methods of collection.

452. *Geographic Information Science: Applications.* 3 Hr. PR: GEOG 350. Operational and management issues in planning management analysis, locational decision making, and design implementation of GIS. Lab project emphasizes student's specialization. (2 hr. lec., 2 hr. lab.) (Alternate years; also listed as GEOG 452.)

454. *Environmental and Exploration of Geophysics 1.* 3 Hr. PR: PHYS 102 and (MATH 156 or GEOL 351). Basic theory, computer modeling, and use of gravitational, magnetic, resistivity, and electromagnetic methods in the evaluation of shallow targets of interest to environmental, hydrological, and hazardous waste site investigations.

455. *Introduction to Remote Sensing.* 3 Hr. Theory, technology and applications of photo-interpretation and digital image analysis of aerial photography and multispectral images. (2 hr. lec., 1 hr. lab.) (Also listed as GEOG 455.)

463. *Physical Hydrogeology.* 3 Hr. PR: GEOL 101 and MATH 126. Principles of ground-water hydrology, emphasizing the physical occurrence and movement of ground water. Topics include aquifer properties, flow net analysis, and hydraulic aquifer testing.

469. *Applied Hydrogeology Seminar.* 1 Hr. A review of professional practices and opportunities in hydrogeology. Seminar talks by hydrogeological professionals from WVU, industry, and government agencies. Field trips to examine hydrogeological practices and techniques.

470. *Mineral Resources.* 3 Hr. PR: GEOL 101 and GEOL 284. Description, mode of occurrence, and principles governing the formation of ore deposits.

472. *Petroleum Geology.* 3 Hr. PR: GEOL 341 or GEOL 342. Origin, geologic distribution, methods of exploration and exploitation, uses and future reserves of petroleum and natural gas in the world.

473. *Petroleum Geology Laboratory.* 1 Hr. PR: GEOL 341 or GEOL 342. Well sample description, correlation, and interpretation. Construction and interpretation of subsurface maps used in exploration for hydrocarbons.

484. *Minerals and the Environment.* 3. Hr. PR: GEOL 284 or GEOL 200. Study of the importance of minerals in human health and the environment. Includes examples of environmental problems that are caused by minerals and solutions to environmental problems that involve minerals.

488. *Environmental Geochemistry.* 3 Hr. PR: GEOL 351 and CHEM 116. Basic review of physical and aqueous chemistry, discussion of basic geochemical processes; calcium carbonate chemistry, diagenetic processes, weathering, the silicate and iron system.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

German (GER)

100. *Intensive Elementary German.* 6 Hr. The equivalent of GER 101 and GER 102 combined into one course.

101. *Elementary German 1.* 3 Hr. PR: Score of G1 on placement test or no prior study of the language or departmental consent. Introduction to the sound of language or departmental consent. Introduction to the sound and writing systems of the language, with emphasis on listening, speaking, reading, and writing within authentic cultural context. (Course presumes no prior knowledge of the language.)

102. *Elementary German 2.* 3 Hr. PR: GER 101. Continuation of GER 101. Introduction to the sound and writing systems of the language, with emphasis on listening, speaking, reading, and writing within an authentic cultural context.

200. *Intensive Intermediate German.* 6 Hr. PR: GER 102 or 100 or consent. The equivalent of GER 203 and GER 204 combined into one course.

203. *Intermediate German 1.* 3 Hr. PR: GER 102 or GER 100.

204. *Intermediate German 2.* 3 Hr. PR: GER 203, or consent. Continuation of GER 203.

293. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

301. *Advanced German Conversation 1.* 3 Hr. PR: GER 204. Content-based conversation course with grammar review.

302. *Advanced German Conversation 2.* 3 Hr. PR: GER 301. Content-based conversation course with grammar review.

303. *Advanced German Composition 1.* 3 Hr. PR: GER 302. Content-based composition course with grammar review.

304. *Advanced German Composition 2.* 3 Hr. PR: GER 303. Content-based composition course with grammar review.

331. *Survey of German Literature 1.* 3 Hr. PR: GER 204. Readings of representative selections from major periods through Romanticism.

332. *Survey of German Literature 2.* 3 Hr. PR: GER 204. Readings of representative selections from major periods since Romanticism.

341. *German Cultural History.* 3 Hr. PR: GER 204. A study of cultural, political, social, and economic developments in the German-speaking countries.

361. *Commercial German 1.* 3 Hr. PR: GER 204 or consent. Practical speaking, writing, and reading experience in German as it relates to business, commerce, and industry.

362. *Commercial German 2.* 3 Hr. PR: GER 361 or consent. Continuation of GER 361. Preparation for Diplom Wirtschaftsdeutsch.

433. *Weimar Cinema.* 3 Hr. A study of representative German films from the years 1919-1932. (May be crosslisted with FLIT 433.)

434. *Fascism and Film.* 3 Hr. A study of representative German films from the years 1919-1945. (May be crosslisted with FLIT 434.)

435. *The New German Cinema.* 3 Hr. A study of representative German films from 1962 to the present. (May be crosslisted with FLIT 435.)

441. *German Culture Since 1945.* 3 Hr. PR: Consent. An exploration of postwar German culture with a focus on the contemporary situation since unification.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours). Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492. *Directed Study.* 1-6 Hr. Directed study, reading, and or research.

493. *Special Topics.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* 1-3 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Gerontology (GERO)

293 A-Z. *Special Topics.* I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

310. *The Aging Women.* 3 Hr. Does gender make a difference in the aging process? This course examines the female experience of growing older. Lecture, discussion, review of literature, with focus on selected works of literature and the creative arts.

410. *The Rural Elderly.* 3 Hr. Overview of health, social, and policy issues that impact the quality of life of older adults living in rural environments, contrasted with those in urban areas. (Equivalent to GERO 681)

412. *Public Policy of Aging.* 3 Hr. Policy analysis of major public programs for senior citizens: Older American Act, Medicare-Medicaid, and Social Security. Discussion of future of these programs and societal response. Emphasis on senior programs in West Virginia. (Equivalent to GERO 512.)

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

495. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

History (HIST)

101. *Western Civilization: Antiquity to 1600.* 3 Hr. (HIST 101 does not have to precede HIST 102.) A survey of the major developments in Western civilization beginning with the ancient Mediterranean world and concluding with Reformation Europe.

102. *Western Civilization: 1600 to Present.* 3 Hr. (HIST 102 may precede HIST 101.) A survey of major developments in Western civilization from 1600 to the present with attention to Europe's emerging industrial society and changing role in world affairs.

104. *Latin America: Past and Present.* 3 Hr. Introduction to Latin American history, stressing the relationship between the past and present. Special emphasis is given to economic problems, political development, and social change in modern Latin America.

105. *The Middle East.* 3 Hr. History of the Middle East from the rise of Islam (610 C.E.) to Twentieth Century. Special attention given to religion, gender issues, political developments, economic problems, relations with the West, cultural patterns, and changes in the modern era.

106. *East Asia: An Introduction.* 3 Hr. Focuses on modern China, Japan, and Korea. Consideration of important problems facing each nation today together with the cultural and historical developments which help explain contemporary affairs in East Asia.

108. *North America: Past and Present.* 3 Hr. Introduction to the history of Canada, Mexico, and the United States, emphasizing selected social, economic, and political developments and how they have influenced the present.

152. *Growth of the American Nation to 1865.* 3 Hr. (HIST 152 does not have to precede HIST 153.) Examines the basic political, economic, and social forces in formation and development of the United States before 1865. Emphasis on national development from independence through the Civil War.

153. *Making of Modern America: 1865 to the Present.* 3 Hr. (HIST 153 may precede HIST 152.) Continues the examination of basic political, economic, and social forces in the development of the United States since the Civil War.

179. *World History to 1500.* 3 Hr. Comparative history of Africa, Asia, and Europe from earliest times until 1500. Political, economic, social, and religious developments with emphasis on patterns of authority, the individual, nature, and society.

180. *World History Since 1500.* 3 Hr. Comparative history of Africa, Asia, and Europe 1500 to the present. Political, economic, and social developments with emphasis on patterns of authority, the individual, nature, society, and the impact of the West.

199. *Orientation to History.* 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities, and opportunities.

201. *History of Ancient Times: Stone Age to the Fall of Rome.* 3 Hr. Ancient civilizations of the Near East and the Mediterranean.

202. *King Tut's Egypt.* I, II. 3 Hr. Surveys ancient Egyptian history from late Pre-dynastic era (4500 BCE) through New Kingdom (1090 BCE). Examines culture, society, religion, art, architecture, and archaeology of ancient Egypt before, during, and after the time of King Tutankhamon.

203. *Introduction to Medieval Europe.* 3 Hr. Treats the emergence of the distinctive culture of Western Europe from the Fall of Rome to the Renaissance, considering the transformation and interaction of politics, economics, society, religion, and ideas.

205. *Early Modern Europe 1300-1750.* 3 Hr. The Renaissance to the Enlightenment, concentrating on political, religious, and social developments with attention to religious change, gender roles, the struggle for effective government, and the scientific revolution.

206. *Social History of Europe.* 3 Hr. Examines the lives of ordinary people in Europe from the end of the Middle Ages to the present.

207. *Revolutionary Europe.* 3 Hr. Traces the development of European history from the reign of Louis XV to the end of the Franco-Prussian War. Political and social history emphasized.

209. *Twentieth Century Europe.* 3 Hr. Traces the major political, economic, and social developments of Europe from World War I to the present.

210. *Modern Military History.* 3 Hr. Military history from the American Revolution to the present, stressing the evolution of warfare with particular attention to strategy, tactics, weaponry, and the consequences of war.

212. *Celtic Europe.* I, II. 3 Hr. Celtic peoples from 800 BC to 500 AD, analysis of the history, politics, religion, economics, and culture of the peoples who provided the foundation for Europe. (Alternate years beginning Spring 1993.)

213. *Roman and Anglo-Saxon England.* I. 3 Hr. England from Roman times through the Anglo-Saxon invasions to the Norman conquest; emphasis upon social, political, and economic development and upon interaction of Celts, Romans, Angles, and Saxons.

214. *England: 1066 to Present.* II. 3 Hr. England from 1066 to modern day, with primary emphasis upon feudal and national monarchy, economic development, social and religious changes, and the creation of the most powerful nation state of the 19th century.

217. *History of Russia: From Kiev to Nicholas.* I. 3 Hr. Interdisciplinary approach integrating political, social, economic, diplomatic, and cultural studies to provide more than an introduction to the history of Russsia. In-depth study of the various aspects of Russian life in an attempt to provide an understanding of the forces which produced the Russian autocracy.

218. *History of Russia: From the Emancipation to the Present.* 3 Hr. Using the same approach as in HIST 217, an attempt is made to follow the changes which turned an underdeveloped country into one of the major world powers.

220. *The Holocaust.* 3 Hr. The origins and development of Nazi genocide against European Jews, focusing on the experience of the victims, the motives of the killers, and the in-action of bystanders.

221. *History of Modern Germany.* 3 Hr. German history from Congress of Vienna to the end of World War II. Student gains special knowledge of more specialized topics by selecting literature and writing essays on these topics.

223. *History of Ireland to 1485.* I. 3 Hr. Evolution of Ireland from pre-historic and Celtic times through the Viking invasions to the appearance of the Anglo-Normans and English overlordship.

224. *History of Ireland: 1485-Present.* II. 3 Hr. Ireland from the Tudor monarchy and its re-conquest of Ireland through the plantation; 17th and 18th century oppression and the independence movements of the 19th century; the formation of the Republic.

225. *History of Scotland to 1746.* I. 3 Hr. A detailed analysis of Scotland from the reign of Kenneth MacAlpine through the Anglo-Norman invasions, the wars of independence, the union, loss of independence in 1707, and final defeat at Culloden.

231. *The Viking World.* I. 3 Hr. Viking-Norse people of 600-1300 AD, emphasis upon economic expansion, cultural impact of trade, nature of their politics, religion and literature, and their influence upon western Europe.

232. *The Baltic World.* II. 3 Hr. The Danish, Swedish, Finnish, Norwegian, and Icelandic peoples from the Viking era to the present; emphasis on the region's unique characteristics and its political, religious, social, and cultural contributions to Europe.

241. *Latin America: Culture, Conquest, Colonization.* 3 Hr. History of the formative period of Latin America, emphasizing the social and economic interaction between Indians, Europeans, and blacks from the conquest to the wars for independence in the early nineteenth century.

242. *Latin America: Reform and Revolution.* 3 Hr. History of modern Latin America, concentrating on the durability of nineteenth-century social, economic, and political institutions, and the twentieth-century reformist and revolutionary attempts to change those institutions.

250. *West Virginia.* 3 Hr. Historical foundations and development of West Virginia, with particular emphasis upon the growth of the government, the economy, and the traditions of the state.

255. *History of American Colonial Society: 1607-1763.* 3 Hr. The planting and maturation of the English colonies of North America. Relationships between Europeans and Indians, constitutional development, religious ferment, and the colonial economy are studied.

256. *History of the American Revolution: 1763-1790.* 3 Hr. The immediate origins and long-range consequences of the movement for independence from Great Britain; includes the 1775-1790 controversy over the charter of new state and federal governments.

257. *Antebellum America: 1781-1861.* 3 Hr. (Completion of HIST 152 is advised.) American history from the Revolution to the Civil War is examined in detail, with particular attention to the key personalities of the era, the development of political parties, the movement westward, the beginnings of industrialization, and the sectional struggles that culminated in war.

259. *The United States: 1865-1918.* 3 Hr. Development of the United States during the most intensive phase of American industrialization; special emphasis on ideas of selected Americans on how to cope with the increase in poverty and social malaise which accompanied economic development; attention is also given to the roots of American imperialism.

261. *Recent America: The United States since 1918.* 3 Hr. (Primarily for non-history majors.) The 1920's, the New Deal, World War II, and a survey of developments since World War II.

264. *American Indian History.* 3 Hr. Surveys the history of Native peoples of what is now the United States, from pre-contact to the present. Ethnohistorical approach emphasizes cultural development as well as interactions with European and American peoples and policies.

271. *Science, Religion, and Myth.* 3 Hr. Surveys human understandings of nature from prehistoric astronomies and Babylonian myths through ancient and medieval thought to the new sciences of Copernicus, Galileo, and Newton.

272. *Science since 1700.* 3 Hr. Historical survey of major trends and critical events in science since the Scientific Revolution, including developments in the physical and biological sciences. Examines both the content and context of science.

275. *The Coal Industry in America.* 3 Hr. The historical development of the coal industry: the technology of extraction, the political and economic context, the United Mine Workers of America, and the particular social problems of the industry will be emphasized.

277. *Revolutions in Science and Technology.* 3 Hr. Examines particular periods of intensified change in science and technology, to develop general understanding of scientific and technical change. Episodes may include the Scientific, Industrial, Darwinian, or other revolutions.

281. *The Agrarian Transformation.* II. 3 Hr. Surveys the modernization of world agriculture from 17th century Europe to the Green Revolution, and its economic, social, and political consequences. (Alternate years.)

284. *History of Environmental Sciences.* II. 3 Hr. Physical environment of the Earth, from the Greek central Earth to plate tectonics. Historical perspectives on geology, geography, oceanography, and other Earth Sciences. (Alternate years.)

293 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

400. *Greece and Rome.* 3 Hr. Covers the Minoan and Mycenean civilizations, Archaic and Classical Greece, Alexander the Great and the Hellenistic Age, the Roman Republic, the Etruscan and Carthaginian states, and the rise of the Roman Empire.

401. *Social and Economic History of the Middle Ages: 300-1000.* 3 Hr. (HIST 203 is recommended as preparation.) The social-economic crisis of the late Roman and German institutions, the Merovingian and Carolingian economies, Pierenne Thesis, and transition to feudal society.

404. *Ancient and Medieval Science.* 3 Hr. Investigations of the natural world in classical antiquity and medieval Europe.

405. *The Renaissance.* 3 Hr. The underlying political, economic, and social structure of fourteenth and fifteenth century Italy with concentration on significant intellectual and cultural trends, including humanism and art, gender roles, state formation, and exploration.

406. *The Reformation.* 3 Hr. Religious change in sixteenth century Europe focusing on distinguishing theological characteristics of major reformers, the response of the people to these religious change, and the impact on European politics and society.

407. *The Rise of Modern Science.* 3 Hr. The emergence of the scientific world view from the Renaissance through the Enlightenment.

408. *Science in Modern Europe.* 3 Hr. Crystallization and generalization of scientific world view in Europe after the Scientific Revolution. Emphasizes the mutual interaction of science, society, and culture.

409. *Brazil: Colony to World Power.* 3 Hr. Examines the transition of Brazil from a colony to a world power, with special emphasis on recent economic developments, regional diversity, political patterns, foreign affairs, and race relations.

410. *Modern Spain.* 3 Hr. Survey of the Muslim, Hapsburg, and Bourbon periods followed by an examination of modern political and social forces, the Civil War, and the rule of Franco.

411. *Industrial Revolution: 1600-1900.* 3 Hr. Focuses on technical, economic, and social changes surrounding the Industrial Revolution in England and the United States. Examines also the expanding effects of the process of industrialization in continental Europe.

412. *Introduction to Public History.* 3 Hr. Introduction to a wide range of career possibilities for historians in areas such as archives, historical societies, editing projects, museums, business, libraries, and historic preservation. Lectures, guest speakers, field trips, individual projects.

413. *France from the Renaissance to Napolean.* 3 Hr. French history from the end of the Hundred Years War to Napoleon's defeat at Waterloo. Focus on the construction of the modern French state, the Englightenment, the French Revolution, and Napoleon.

414. *France since 1815.* 3 Hr. French history from the Restoration of the Bourbon monarchy to the present. Will emphasize the development of a modern industrial society, the revolutions of the 19th century, the impact of the World Wars, and France's role in the new Europe.

417. *World War II in Europe.* 3 Hr. PR: 6 hrs. History or Consent. Impact of World War II on political culture and moral fabric; emphasis on themes of invasion, occupation, collaboration, resistance, survival, and retribution. (Alternate years.)

418. *Eastern Europe since 1945.* 3 Hr. The social, economic, intellectual, cultural, and political history of Eastern Europe since the Second World War. Special emphasis on the causes of the East European revolutions of 1989 and the problems of post-communist transition. (Offered every third semester.)

419. *Revolutionary Russia. 1905-1939.* 3 Hr. Detailed study of the revolutionary era of Russian/Soviet history with emphasis on the origins of Russian radicalism, the upheavals of 1905 and 1917, and Stalin's "revolution from above."

420. *The U.S.S.R.: 1939 to Present.* 3 Hr. Detailed study of the recent social and political history of the Soviet Union. The Soviet experience in World War II, Stalin's last years, and the conflict between reformism and conservatism since Stalin's death.

421. *Hilter and the Third Reich.* 3 Hr. PR: Junior, senior, or graduate standing. Myths and realities of Hitler's public and personal life; emphasis on rise to power, party, ideology, and propaganda techniques; position and policies as Fuehrer.

422. *Twentieth-Century Germany from Weimar to Bonn.* 3 Hr. The Weimar Republic, the Third Reich, and the two German states created after World War II.

424. *15th and 16th Century England.* II. 3 Hr. England from Richard II to Elizabeth I, covering developments in politics, religion, and society, ranging from the War of the Roses and the plague to Protestantism and Shakespeare. (Alternate years.)

425. *History of Modern China.* 3 Hr. Introduction to modern China (since 1839) with attention to China's Confucian heritage; the Chinese effort to modernize in the face of Western diplomatic and economic pressure; specific attention to China's nationalist and communist revolutionary traditions.

426. *History of Modern Japan.* 3 Hr. Modern Japan (since 1868) with attention to development of Japanese institutions and ideas in earlier periods, especially the Tokugawa Era (1600-1868); examines the rapid pace of economic change in the nineteenth and twentieth centuries along with the important social, political, and diplomatic implications of this change.

427. *East Africa to 1895.* 3 Hr. East Africa from earliest times to the beginning of European control. Population movement and interaction, development of varying types of policy, revolutionary change, and the European scramble for East Africa form the major focus.

428. *East Africa since 1895.* 3 Hr. History of colonial rule and movement to independence in East Africa. Political, economic, and social changes will be examined with particular emphasis on the rise and triumph of African nationalism.

429. *History of Africa: Pre-Colonial.* 3 Hr. History of Africa from earliest times to the middle of the nineteenth century. Particular emphasis on population and interaction, state formation, and the development of trade in sub-Saharan Africa as well as the impact of such external influences as Christianity and Islam.

430. *History of Africa: European Dominance to Independence.* 3 Hr. History of Africa from the middle of the nineteenth century to the 1960's. Political and economic trends will form major focus.

431. *Seventeenth Century Britain: 1603-1715.* 3 Hr. The more significant political, social, economic, religious, and intellectual developments of Britain during a century of revolution and of the men and women who interacted with those movements.

432. *Eighteenth Century Britian: 1715-1832.* 3 Hr. The "Age of Aristocracy," the political, social, religious, economic, and intellectual impact of the Industrial, Agricultural, American, and French revolutions.

433. *West Africa to 1885.* I. 3 Hr. West Africa from the earliest times to the imposition of colonial rule. Examines social, economic, political developments and interactions, and European scramble for West Africa. (Alternate years.)

434. *West Africa from 1885.* II. 3 Hr. Abolition of the transatlantic slave trade, imposition of colonial rule, colonial economic, social and administrative systems, the rise and triumph of African nationalism, West Africa since independence.

441. *17th Century Colonial America.* I. 3 Hr. The establishment of England's American colonies and their development during a century of political, social, religious, and economic change and the interaction between events in Old and New Worlds. (Alternate years.)

442. *18th Century America.* II. 3 Hr. The social, political, and economic maturation of England's American colonies, the move toward independence, and the establishment of government at state and federal levels. (Alternate years.)

445. *History of American Women.* 3 Hr. Examination of the history of American women from 1607 to the present, with emphasis on working conditions, women's rights, development of feminism, women's role in wartime, and women in the family.

446. *History of European Women to 1700.* 3 Hr. History of European women to 1700, emphasizing philosophic, economic, and societal sources of women's oppression, women's self-perceptions and their role in work, religion, and the family and the development of feminism.

448. *Sexuality in American Culture.* 3 Hr. Explores changes in sexuality in the United States from the seventeenth century to the present, examining social and cultural struggles and debates over the meaning of sexuality and sexual orientation in America.

449. *Contemporary Women's Movements.* 3 Hr. Compare contemporary U.S. feminist movements with selected international movements. Examines "What is feminism?" and how answers change with social and political context. Explores impact of race, class, sexual orientation, and national environment on different movements.

451. *African-American History to 1900.* 3 Hr. African background, the slave trade and evolution of slavery in the New World. The attack on slavery and its destruction.

452. *African-American History Since 1900.* 3 Hr. Reconstruction, the age of reaction and racism, black migration, black nationalism, blacks in the world wars, and desegregation.

453. *Civil War and Reconstruction.* 3 Hr. Causes as well as constitutional and diplomatic aspects of the Civil War; the role of American black in slavery, in war, and in freedom; and the economic and political aspects of Congressional Reconstruction.

456. *The Gilded Age in U.S. History.* 3 Hr. Examines responses of the American people and institutions to opportunities and problems of the late nineteenth century. Emphasis on rise of big business; labor organization; immigration; regular, reform, and radical politics; disappearance of the frontier; farm crisis; and origins of imperialism.

457. *The United States From McKinley to the New Deal, 1896 to 1933.* 3 Hr. American national history from William McKinley to Franklin D. Roosevelt. Particular attention is given to great changes in American life after 1896; national political, economic, social, and cultural development; the Progressive Era in American politics; and alterations in American foreign relations resulting from the Spanish-American War and World War I.

459. *United States History: New Deal to Great Society.* 3 Hr. Covers New Deal; World War II; Cold War, with emphasis on American social, political, technological, and cultural developments; United States domestic problems and foreign relations from 1945 to 1968.

460. *World War II in America.* 3 Hr. Examines the American experience in World War II; with an emphasis on the economic, social, and political impact of war on American society.

463. *American Diplomacy to 1941.* 3 Hr. PR: None. HIST 152 and 153 recommended. American foreign policy and diplomacy from the adoption of the Constitution to the beginning of World War II.

464. *American Diplomacy since 1941.* 3 Hr. (HIST 152 and 153 recommended.) America's foreign policy and growing involvement in international relations including the U.S. role in World War II, the Korean War, and Vietnam.

465. *The Vietnam War.* II. 3 Hr. United States participation in the 1946-1975 fighting in Indochina. United States involvement in the political and military conflict, and the impact of the war on the United States. (Alternate years.)

466. *American Economic History to 1865.* 3 Hr. Origins and development of American business, agricultural, and labor institutions, problems, and policies, from 1600 to 1865; influence of economic factors upon American history during this period.

467. *American Economic History Since 1865.* 3 Hr. Scope similar to HIST 466.

468. *The Old South.* 3 Hr. (For advanced undergraduate and graduate students.) History of the South exploring peculiar differences that led to an attempt to establish a separate nation. The geographical limitation permits a detailed study of economic and social forces within the context of the larger national history.

469. *The New South.* 3 Hr. Integration of the South into the nation after the Civil War. Emphasis on southern attitudes toward industrialization, commercial agriculture, organized labor, and African-Americans. Special attention to the southern literary renaissance and conservative and progressive politics of the southern people.

473. *Appalachian Regional History.* 3 Hr. Historical survey of Central Appalachia's three phases of development: traditional society of the nineteenth century, the transformation of a mountain society by industrialization at the turn of the twentieth century, and contemporary Appalachia.

474. *The City in American History.* 3 Hr. A survey of urban history in the United States, including the colonial period, with emphasis on the nineteenth and twentieth centuries, focusing on physical development of cities (planning, transportation, architecture, surburbanization) and social history.

489. *Introduction to Historic Preservation.* 3 Hr. Introduction to historic preservation issues, including law, economics, not-for-profit organizations, site interpretation, architectural history, industrial archeology, federal programs, downtown revitalization, and landmarks commissions.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Expenence.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR. Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Honors (HONR)

199. *Orientation to Honors.* 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

293. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Expenence.* 1-9 Hr. PR: Consent. (May be repeated up to a maximum of 9 hours.) Prearranged experimental learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Horticulture (HORT)

220. *General Horticulture.* I. 3 Hr. PR: BIOL 101 and BIOL 103, or consent. Principles underlying present-day horticulture practice with special emphasis on how basic discoveries in plant science have been applied in horticulture.

226. *Flower Judging.* II. 1 Hr. One laboratory period per week. Identification and judging of flowers with emphasis on the aesthetic values which underlie desirability in a variety.

227. *Vegetable Identification and Judging.* I. 1 Hr. Identification and judging the common vegetables and the test associated with olericulture in West Virginia. Emphasis is placed on the cultural practices associated with top quality vegetables.

251. *Floral Design.* I. 3 Hr. Basic course in flower arrangement to cover occasions for the home and retail flower shop.

260. *Woody Plant Materials.* I. 3 Hr. PR: BIOL 101 and BIOL 103 or equiv. Common ornamental woody plants, their identification, cultural needs, and evaluation of use; some outdoor study and a one-day nursery trip. (2-3 hr. lab.) (Offered fall of odd years.)

262. *Herbaceous Plant Matenals.* I. 3 Hr. Identification, description, adaptability, and evaluation of selected herbaceous annuals and perennials with emphasis on their use as design elements. (Offered Fall of even years.)

420. *Plant Propagation.* II. 3 Hr. PR: PLSC 206 or consent. Study of practices of plant propagation and factors involved in reproduction in plants. (Offered Spring of even years.)

442. *Small Fruits.* I. 3 Hr. PR: PLSC 206, HORT 220, or Consent. (One 2-day field trip required.) Taxonomic, physiological, and ecological principles involved in production and handling of small-fruits. (2 hr. lec., 1 hr. scheduled lab.) (Offered in Fall of odd years.)

443. *Vegetable Crops.* I. 3 Hr. PR: PLSC 206 or consent. (One 3-day field trip required.) Botanical and ecological characteristics influencing the production of vegetable crops. (2 hr. lec., 1 hr. lab.) (Offered in fall of even years.)

444. *Handling and Storage of Horticultural Crops.* I. 3 Hr. PR: PLSC 206 and CHEM 116. Characteristics of perishable crops. Methods and materials used to maintain quality. (2 hr. lec., 1 hr. lab.) (Offered in fall of odd years.)

445. *Greenhouse Management.* II. 3 Hr. PR. Two semesters of inorganic chemistry and HORT 220 or consent. Greenhouse as a controlled plant environment. How to regulate factors influencing plant growth and development within specialized environments of greenhouses.

446. *Tree Fruits.* I. 3 Hr. PR: PLSC 206 or consent. Principles and practices involved in production of tree fruits. (2 hr. lec., 1 hr. scheduled lab.) (Offered in Fall of even years.)

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Human Nutrition and Foods (HN&F)

171. *Introduction to Human Nutrition.* I, II. 3 Hr. Nutrient structure, metabolism, integrated function, and their importance to human well-being during all stages of the life cycle. Current concerns and those of special interest to college students in meeting nutrient needs.

271. *Contemporary Issues in Nutrition.* (Odd years.) 3 Hr. PR: HN&F 171. Contemporary issues in nutrition including a critical review of food practices and recent trends in nutrition.

348. *Science of Food Preparation.* I. 5 Hr. PR: HN&F 171 and CHEM 116 and BIOL 102 and BIOL 104. Basic chemical processes that occur within food systems, including effects of storage, processing, ingredients, and alteration in formulation on qualities of food products. Reasons for basic practices and procedures essential for obtaining standard products. (4 hr. lec., 3 hr. lab.)

350. *Cross-Cultural Dietary Patterns.* II. 4 Hr. PR: HN&F 171 and HN&F 348. Contemporary United States models for menu planning, meal service, and mealtime etiquette; factors affecting evolution of American regional/ethnic/ dietary patterns; international dietary patterns; integration of current nutritional recommendations into ethnic dietary practices. (3 hr. lec., 3 1/2 hr. lab.)

353. *Food Service Systems Management.* II. 4 Hr. PR: Dietetics major and MATH 126 or HN&F 350 and PR or Conc.: ENVM 241. Introduction to food service systems and systems management. Field experience in institutional and commercial food services.

391 A-Z. *Advanced Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

460. *Advanced Nutrition.* I. 3 Hr. PR: HN&F 171, Physiology. Coreq.: Biochemistry. Role of nutrients in physiological and biochemical processes and metabolism in the body. Biochemical foundations of RDA and clinical nutrition.

461. *Nutrition Laboratory Experimentation.* I. 2 Hr. Coreq.: HN&F 460 or consent. Nutrient analysis and introduction to nutrition experimentation; nutritional assessment.

472. *Community Nutrition.* 3 Hr. PR: HN&F 171. Beginning planning for community nutrition to individuals and families at various stages of the life cycle. Roles of concerned agencies and professional groups. Clinical experience in community facilities.

474. *Nutrition in Disease.* II. 4 Hr. PR: HN&F 171; Physiology or consent. Nutritional care aspects of patients. Modification of diet to meet human nutrition needs in various medical conditions.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Senior standing and Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Humanities (HUM)

101. *Introduction to Western Civilization 1.* I, S. 3 Hr. Presents the high points of Greco-Roman and Medieval European civilizations: their art, architecture, philosophy, religion, literature, and music.

102. *Introduction to Western Civilization 2.* II, S. 3 Hr. Presents the art, architecture, philosophy, religion, literature, and music of the following periods in Western civilization: the Renaissance, the Age of Classicism, and the revolutionary nineteenth and twentieth centuries.

103. *Honors Seminar in Humanities 1.* 3 Hr. Honors courses for selected students mirroring HUM 101. Affords participants a wider opportunity for discussion than in HUM 101 and for reading the classic statements on the nature of civilization.

104. *Honors Seminar in Humanities 2.* 3 Hr. Honors courses for selected students mirroring HUM 102. Affords participants a wider opportunity for discussion than in HUM 102 and for reading the classic statements on the nature of civilization.

211. *Elementary Greek 1.* 3 Hr. PR: Permit required. Available only as a tutorial. At least two previous semesters of a foreign language, Latin if possible, is preferred. The study of classical Greek and, by special arrangement, New Testament Greek. (Does not satisfy the Arts and Sciences foreign language requirement.)

212. *Elementary Greek 2.* 3 Hr. PR: HUM 211, permit required. Available only as a tutorial. At least two previous semesters of a foreign language, Latin if possible, is preferred. The study of classical Greek and, by special arrangement, New Testament Greek. (Does not satisfy the Arts and Sciences foreign language requirement.)

213. *Intermediate Greek 1.* 3 Hr. PR: HUM 212, permit required. Available only as a tutorial. At least two previous semesters of a foreign language, Latin if possible, is preferred. The study of classical Greek and, by special arrangement, New Testament Greek. (Does not satisfy the Arts and Sciences foreign language requirement.)

214. *Intermediate Greek 2.* 3 Hr. PR: HUM 213, permit required. Available only as a tutorial. At least two previous semesters of a foreign language, Latin if possible, is preferred. The study of classical Greek and, by special arrangement, New Testament Greek. (Does not satisfy the Arts and Sciences foreign language requirement.)

293 A-Z. *Special Topics.* 3 Hr. Investigation of topics not covered in regularly scheduled courses.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

492. *Directed Study.* I, II, S. 1-3 Hr. Directed study, reading, and/or research.

493 A-Z. *Special Topics.* 3 Hr. Investigation of topics not covered in regularly scheduled courses.

495. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Industrial and Labor Relations (ILR)

462. *Collective Bargaining and Labor Relations.* 3 Hr. PR: Consent. Examination of the theory and practice of collective bargaining. Topics include economic and historical environment, labor law, unionization, contract negotiation, patterns in contract content, conflict resolution, grievance handling, and an introduction to arbitration.

494. *Seminar.* 1-3 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

Industrial and Management Systems Engineering (IMSE)

200. *Fundamentals of Industrial Engineering.* 1 Hr. PR: Sophomore standing. An introduction to the basic principles of industrial engineering.

213. *Engineering Statistics.* 3 Hr. PR or CONC: MATH 251. The use of statistical analysis in engineering decision making. Topics covered include basic statistical methods of describing data, common statistical distributions encountered in engineering, test of hypotheses, confidence intervals, and simple linear regression.

220. *Re-Engineering Management Systems.* 3 Hr. PR: Sophomore standing. Principles and techniques associated with system, job, and task re-engineering. Work measurement systems, work flow analysis, and time study techniques. Introduction to factors influencing people machine.

293. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

302. *Manufacturing Processes.* 2 Hr. PR: IMSE 304 or MAE 343. Lectures and demonstrations relating to materials properties, mechanical properties, process parameters, design, equipment, and economics of processing systems emphasizing castings, machining, joining, and forming operations.

303. *Manufacturing Processes Laboratory.* 1 Hr. COREQ: IMSE 302. Laboratory experiments and demonstrations of the basic manufacturing operations of casting, machining, and joining. Process parameter measurement, inspection techniques, and CNC programming are performed and laboratory report writing is emphasized.

304. *Materials and Costing.* 3 Hr. PR: IMSE 377 and MAE 243. Lectures and demonstrations concerning material properties, mechanical properties of materials, and costing systems for evaluating material costs and manufacturing costs.

314. *Advanced Analysis of Engineering Data.* 3 Hr. PR: IMSE 213. Introduction to linear statistical models. Design and analysis of simple experimental configurations occurring frequently in engineering studies. Similarities and differences between regression and experiment design models emphasized in a vector-matrix setting.

316. *Industrial Quality Control.* 3 Hr. PR: IMSE 213. Principles and methods for controlling the quality of manufactured products, with emphasis on both economic and statistical aspects of product acceptance and process control.

331. *Computer Applications in Industrial Engineering.* 3 Hr. PR: ENGR 102 and IMSE 220. Introduction to computer applications in manufacturing. Emphasis on system design and analysis and the role of computers in productivity improvement.

343. *Production Planning and Control.* 3 Hr. PR: IMSE 220 and PR or CONC: IMSE 314. Principles and problems in forecasting, aggregate planning, material management, scheduling, routing, and line balancing.

350. *Introduction to Operations Research.* 3 Hr. PR: IMSE 213 and IMSE 331. Basic tools and philosophies of operations research. Tools include: linear programming, Markov chains, queuing theory, and simulation. Other operations research techniques are presented as they relate to the overall systems philosophy.

360. *Human Factors Engineering.* 3 Hr. PR: IMSE 220 and PR or CONC: IMSE 213. Includes the study of ambient environment, human capabilities, and equipment design. Systems design for the human-machine environment interfaces will be studied with emphasis on health, safety, and productivity.

377. *Engineering Economy.* 3 Hr. Basic concepts of financial analysis, investment planning, and cost controls as they apply to management technology investment in manufacturing; financial planning and budgeting as applied to an engineering function.

405. *Design for Manufacturability.* 3 Hr. PR: IMSE 302 and IMSE 303. Aspects of design, manufacturing, and materials; emphasis on design for manufacturability and assembly, including material selection and manufacturing processes on product cost.

415. *Statistical Decision Making.* 3 Hr. PR or CONC: IMSE 213. Basic concepts of probability theory. Discrete and continuous distributions, joint and derived distributions, with application to industrial and research problems. Introduction to generating functions and Markov chains.

417. *Total Quality Management.* 3 Hr. PR: IMSE 213. Fundamentals and philosophy of total quality management in industry and government. Includes implementation of quality function deployment and the tools of off-line quality assurance procedures.

422. *Job Evaluation and Wage Incentives.* 3 Hr. PR: IMSE 220 or Consent. Principles used in evaluating jobs, rates of pay, characteristics and objectives of wage incentive plans, incentive formula and curves.

431. *Expert Systems in Industrial and Management Systems Engineering.* 3 Hr. PR: IMSE 331. Expert systems design and development for manufacturing and service applications: knowledge acquisition, representation, search techniques, inference engines, data base interfaces, algorithmic interfaces.

432. *Designing Decision Support System.* 3 Hr. PR: IMSE 331. Basic concepts of software design of decision support systems that can be used by non-technical personnel in management positions.

443. *Facility Planning and Design.* 3 Hr. PR: IMSE 343 and IMSE 350. Problems of facility and equipment location. Long-range planning of industrial facilities. Block and detailed layout of manufacturing plants and general offices. Space utilization and allied topics in facility design.

449. *Design of Material Handling Systems.* 3 Hr. PR: IMSE 220 or Consent. Application of industrial engineering theory and practice to selection of material systems and equipment including efficient handling of materials from first movement of raw materials to final movement of finished product. Present quantitative design techniques.

455. *Simulation by Digital Methods.* 3 Hr. PR: IMSE 213 and IMSE 331 or Consent. Introduction to Monte Carlo simulation methods and their application to decision problems. Student identifies constraints on problems, collects data for modeling, and develops computer programs to simulate and analyze practical situations. Interpretation of results emphasized.

461. *System Safety Engineering.* 3 Hr. PR: Consent. The concepts of hazard recognition, evaluation analysis, and the application of engineering design principles to the control of industrial hazards.

471. *Design of Productive Systems 1.* 3 Hr. PR: Senior standing; 21 hours of required IMSE courses in industrial engineering. The integration of industrial engineering principles in the design of productive systems. Emphasis will be on analysis of different systems for productivity management.

472. *Design of Productive Systems 2.* 3 Hr. PR: IMSE 471 and senior standing in industrial engineering. Continuation of IMSE 471.

473. *Team Facilitation.* 3 Hr. This course prepares students to facilitate continuous improvement teams. Students learn basics of team operations, facilitation tools, and facilitation practices.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR. Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Consent. Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Interior Design (ID)

100. *Interior Design Peer Mentoring.* I. 1 Hr. PR: ID major. New students in interior design participate with upper division mentors in a variety of activities designed to acquaint the students with peers and faculty and to enhance their understanding of the field of interior design.

110. *Introduction to Interior Design.* I. 3 Hr. Design philosophy, elements and principles, analysis, and aesthetic and functional evaluation in the context of design as a means of human communication.

125. *Design Foundations.* I. 3 Hr. PR or Conc: ID 110. Application of the theoretical elements and principles of design to two-and three-dimensional compositions.

155. *Interior Design Graphics 1.* I, II. 3 Hr. Studio experience reading and drafting architectural plans, elevations, sections, details, and paralines.

200. *Interior Materials and Structures.* 3 Hr. PR: ID 110 and ID major. Interior design materials including types, qualities and uses, and calculations of quantities; basic architectural elements related to interior design.

225. *Space Planning.* I, II. 3 Hr. PR: ID 110. Studio experience using two- and three-dimensional techniques to increase understanding of spatial relationships; emphasis on ergonomics, anthropometry, and proxemics.

230. *History of Interiors and Furniture 1.* I. 3 Hr. PR: Six hours of ID or consent. Interiors, furnishings, and decorative arts from antiquity through neoclassical periods in France, England, and America.

235. *Interior Design Graphics 2.* 3 Hr. PR: ID 155. Studio course in spatial graphics; experience in constructing and using perspective grids; perspective sketching and basic color rendering.

260. *History of Interiors and Furniture 2.* II. 3 Hr. PR: ID 230. Interiors, furniture, and decorative arts of Europe and North America in the nineteenth and twentieth centuries.

270. *Interior Lighting Design.* II. 3 Hr. PR: ID 200. General concepts of light quality, quantity, distribution, and color rendering for residential and contract spaces; practical applications using lighting calculations and graphic illustrations for lighting design.

325. *Computer-Aided Drafting and Design.* II. 2 Hr. PR: ID 376. Lecture/studio using computer-aided drafting and design for interior design; emphasis on CADD as a drafting tool.

355. *Contract Interior Design 1.* 3 Hr. PR: ID 375 and ID 376. Studio experience in contract interior design and problems; emphasis on design of offices as work experience.

375. *Residential Interior Design.* I, II. 3 Hr. PR: ID 270 and ID 260 and TXCL 240. Studio experience in residential interior design problems; emphasis on design process, problem solving, functional and aesthetic considerations, critiquing, and graphic presentations.

376. *Interior Design Graphics 3.* II. 2 Hr. PR: ID 155. Studio course to strengthen drafting, detailing, and presentation skills; production of typical design construction drawings.

400. *Interior Design Internship.* II. 3-6 Hr. PR: ID 375 and written consent. Supervised, direct experience with a practicing designer or other closely allied professional in a career environment.

420. *Interior Design Professional Practices.* I. 3 Hr. PR: ID 375. Relationships between marketing/management functions and the design process; problem-solving approach to completion of a design installation.

450. *Interior Design Seminar.* II. 1 Hr. PR: ID 420. Professionals in interior design discuss professional organizations, ethics, entry-level positions, and business practices.

455. *Contract Interior Design 2.* II. 3 Hr. PR: ID 355. Studio experience in solving design problems related to public spaces, hotels, restaurants, department stores, specialized retail outlets, or health care facilities.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours). Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

International Studies (INTS)

199. *Orientation to International Students.* 1 Hr. Orientation to degree requirements, program opportunities, activities such as Model U.N. and O.A.S., study abroad, internships, career and graduate school planning.

488. *Capstone International Studies.* 3 Hr. Capstone experience required for all majors. Options include study abroad internships, simulations, and senior research projects.

Italian (ITAL)

101. *Elementary Italian 1.* 3 Hr.

102. *Elementary Italian 2.* 3 Hr. PR: ITAL 101. Continuation of ITAL 101.

203. *Intermediate Italian 1.* 3 Hr. PR: ITAL 102.

204. *Intermediate Italian 2.* 3 Hr. PR: ITAL 203. Continuation of ITAL 203.

293. *Special Topics.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

303. *Composition and Conversation.* 3 Hr. PR: ITAL 204.

304. *Advanced Conversation.* 3 Hr. PR: ITAL 204.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Japanese (JAPN)

101. *Elementary Japanese 1.* 3 Hr.

102. *Elementary Japanese 2.* 3 Hr. PR: JAPN 101. Continuation of JAPN 101.

203. *Intermediate Japanese 1.* 3 Hr. PR: JAPN 102.

204. *Intermediate Japanese 2.* 3 Hr. PR: JAPN 203.

293. *Special Topics.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

301. *Advanced Japanese 1.* 3 Hr. PR: JAPN 204.

302. *Advanced Japanese 2.* 3 Hr. PR: JAPN 301.

303. *Advanced Japanese 3.* 3 Hr. PR: JAPN 302.

304. *Advanced Japanese 4.* 3 Hr. PR: JAPN 303.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to maximum of 18 hours). Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Journalism (JRL)

101. *Introduction to Mass Communication.* 3 Hr. (Recommended for all University students.) Mass communicator's role in developing political, social, and economic fabrics of a democratic society. Organization and function of newspapers, magazines, broadcast stations, and other principal media, including the role of advertising and public relations.

215. *Media Writing.* 3 Hr. PR: MDS 103 and ENGL 101 and ENGL 102 and JRL 101 with a grade of C or better, passage of Journalism Qualifying Exam. Introduction to the fundamental writing and fact-gathering skills of journalism and public relations for the print and electronic media. Students must purchase a Macintosh double-density or high-density disk for class. (Lab fees will be assessed for this course.)

220. *Introduction to Photography.* 3 Hr. (Open to all University students.) Basic techniques of film developing and printing. Students are required to purchase their own film, enlarging paper, chemicals, and have access to a camera. The supplies cost approximately $60-80 per semester. (Lab fees will be assessed for this course.)

250. *Publications Problems.* 1-3 Hr. PR: Admission to School of Journalism. Exploration of planning, designing, and printing problems, and dealing with print professionals. (Lab fees will be assessed for this course.)

289. *Media Issues and Ethics.* 2 Hr. In-depth study of contemporary media issues such as right of access to media and morality and ethics in news and advertising; new FTC and FCC regulations; media responsibility to society; social responsibility of media professionals.

293 A-Z. *Advanced Journalism Problems.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

318. *Reporting for Print Media.* 3 Hr. PR: Admission to the School of Journalism. Essentials of developing and covering a news beat. Students generate stories, cultivate sources, and discover their community. News and feature stories include police, courts, budgets, meetings, and speeches. A departmental honors section, available to students possessing superior writing skills, requires the instructor's approval. (Lab fees will be assessed for this course.)

319. *Copy Editing and Make-up.* 3 Hr. PR: JRL 318. Students develop the skills necessary for the modern newspaper copy desk, including copy editing, working with wire service copy, headline writing, page layout, and desktop production. (Lab fees will be assessed for this course.)

320. *Advanced Photography.* 3 Hr. PR: JRL 220 or equivalent. Designed to equip students to serve all communication media, including magazines, newspapers, and television. A high level of competence is assumed at the outset. Course requirements include a portfolio (general or around a specific theme) and numerous weekly assignments. (Lab fees will be assessed for this course.)

421. *Mass Communications Research Methods.* 3 Hr. A broad study of scientific and critical research methods as they apply to mass media practices; review of relevant sources for historical data gathering, readership, and audience analysis; evaluation of marketing and public opinion research. (2 hr. lec., 1 hr. field experience.)

431. *Multi-Media Production.* 3 Hr. PR: JRL 220. Preparation of two multi-media presentations; participation in a client-oriented project; color theory, slides, script writing, research, and other aspects of visual communications. Supplies cost about $75. (Lab fees will be assessed for this course.)

441. *Internship.* 3 Hr. PR: Journalism majors only and foundation courses in one of the major programs. Full-time employment for a minimum of 10 weeks under a signed contract detailing the terms of the experience. (Graded Pass/Fail)

442. *Practicum.* 1-2 Hr. Journalism majors only. PR: Foundation courses in one of the major programs. Student must have a signed contract detailing terms of the learning experience. Eight-20 hours per week for a minimum of 10 weeks, while taking other courses. (Graded Pass/Fail)

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant. (Graded Pass/Fail)

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours). Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development. (Graded Pass/Fail)

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Landscape Architecture (LARC)

105. *Introduction to Landscape Architecture.* I, II. 3 Hr. A general overview of the field of landscape architecture, environmental design, and planning.

120. *Landscape Architectural Drawing.* I. 3 Hr. PR: For landscape architecture majors only. Introduction to elements of visual techniques in drafting, basic design, and environmental systems. (Two 3-hr. studios.)

121. *Landscape Architectural Graphics.* II. 3 Hr. Introduction to design and graphic methodology with applications to current standards. Development of principles of communication in two- and three-dimensional visual thinking applicable to environmental design professions. (Two 3-hr. studios.)

212. *History of Landscape Architecture.* I, II. 3 Hr. A broad survey of the history of the designed human environment with emphasis on the development of landscape architecture. (Does not fulfill Cluster A for landscape architecture students.)

223. *Computer Graphics in Landscape Architecture.* I, II. 3 Hr. PR: LARC 121. Application of basic computer graphics to include drafting, rendering, and visualization software used in developing landscape architectural plans and environment analysis. (Two 3-hr. studios.)

229. *Landscape Architecture.* I. 3 Hr. PR: For non-landscape architecture majors only. An appreciation of the basic principles of planting design and information pertaining to the use of ornamental plants around the home. (2 hr. lec., one 2-hr. studio.)

231. *Landscape Construction Materials and Methods.* II. 3 Hr. PR: LARC 250. A study of materials used in landscape architectural construction with emphasis on methods of construction and the preparation of construction drawings for design implementation. (2 hr. lec., one 2-hr. studio.)

250. *Theory of Landscape Architectural Design.* I. 3 Hr. PR: LARC 121 or equiv. Application of elements and principles of art and design to landscape architecture. (1 hr. lec., two 2-hr. studios.)

251. *Landscape Architectural Design.* II. 3 Hr. PR: LARC 250 or equiv. Investigation and application of various factors which play a role in the design of natural and man-made environment. (1 hr. lec., two 2-hr. studios.)

260. *Ornamental Woody Plants and Groundcovers.* I. 3 Hr. PR: BIOL 101 and 103, or equiv. Design uses, ornamental qualities, cultural requirements, and identification of woody plants and groundcovers in West Virginia. Field course. (One day field trip required at student's expense). (Two 3-hr. studios.)

261. *Planting Design.* II. 3 Hr. PR: LARC 250 and LARC 260. Study of planting design theory and practice, including uses of plants in site and environmental design, planting design techniques and preparation of planting plans, construction details, and technical specifications. (1 hr. lec., two 2-hr. studios.)

330. *Landscape Architectural Construction 1.* I. 4 Hr. PR: (CE 200 or equiv.) and ((MATH 126 and MATH 128) or (MATH 129 or equiv.)). The study of the technical principles of grading design, their application to site planning, and preparation of land form grading plans. (1 hr. lec., two 3-hr. studios.)

331. *Landscape Architectural Construction 2.* II. 4 Hr. PR: LARC 330. Study and preparation of parkway plans (road alignment), surface and sub-surface drainage plans, advanced grading plans, and cost estimates. (2 hr. lec., two 2-hr. studios.)

350. *Landscape Architectural Design 2.* I. 4 Hr. PR: LARC 223 and LARC 251 and LARC 261. Study of medium scale site design with emphasis on site analysis, design methodology, and presentation. (1 hr. lec., two 3-hr. studios.)

351. *Landscape Architectural Design 3.* II. 4 Hr. PR: LARC 330, 350, and 360. Site-design problems dealing with complex environmental systems emphasizing rural and urban design. Projects are integrated with landscape architectural construction. (1 hr. lec., two 3-hr. studios.)

360. *Natural Systems Design.* I. 4 Hr. PR: LARC 251 and LARC 261; Conc.: LARC 350. Study of native and naturalized plants of this region and their ecological tolerances, importance to site analysis, and use in planting design. (1 hr. lec., two 3-hr. studios.) (Two-day field trip required at student's expense.)

361. *Interior Plantscaping.* II. 2 Hr. PR: BIOL 101 and BIOL 103, or PLSC 206. The study of plants appropriate to interior plantscaping and their special needs and uses in design situations. (One-day field trip required at student's expense.) (1 hr. lec., one 3-hr. studio.)

448. *Design Analysis.* II. 2 Hr. PR: Consent. Analysis of planning and design projects to offer solutions to a given problem. (Offered in spring of even years.)

450. *Advanced Landscape Architectural Design 1.* I. 5 Hr. PR: LARC 331 and LARC 351 and LARC 360. Comprehensive design problems integrating all aspects of site design, planting design, and construction. Includes advanced projects for urban and rural sites. (2 hr. lec., two 3-hr. studios.)

451. *Advanced Landscape Architectural Design 2.* 5 Hr. PR: LARC 450. A comprehensive problem in landscape architecture in which the student demonstrates proficiency acquired from their program of study. (2 hr. lec., two 3-hr. studios.)

452. *Contemporary Issues in Landscape Architecture.* II. 2 Hr. PR: LARC 250; Conc.: LARC 251. A series of seminar discussions exploring current and future trends in the practice of landscape architectural design, planning, and management (2 hr. lec.)

465. *Regional Design.* II. 3 Hr. PR: Consent. Consideration of regional landscapes in order to effectively relate design to the ecology and development of a region. (Offered in spring of even years.)

466. *Introduction to Regional and Urban Design Issues.* I. 3 Hr. PR: LARC 251. Urban analysis methods, urban development, and management of urban growth. The course focus is on understanding urban issues and urban growth management (Offered in fall of odd years.)

484. *Professional Practice.* I. 3 Hr. PR: Consent. Procedures in preparation of contract documents, fees, estimates, operation of an office, and relationship to clients and contractors. (3 hr. lec.)

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Expenence.* I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged expenential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent Investigation of topics not covered in regularly scheduled courses.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director Independent reading, study, or research.

570. *Meanings of Place.* I. 3 Hr. Study of place a psychological and social phenommon with implications for community development historic preservation, interpretation, design, management, natural, and cultural sustainability and human well-being. (Equivalent to RPTR 570.)

Language Teaching Methods (LANG)

293 A-Z. *Special Topics.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

322. *Second Language Acquisition.* 3 Hr PR: LING 311. Study of linguistic concepts. Development patterns, and contributing factors relevant to second language acquisition

421. *The Teaching of Foreign Languages.* 3 Hr. PR: Consent. Required of all students who are prospective foreign language teachers on the secondary level.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

490 F. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Supervised practice in college teaching of languages. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain experience. (Grading may be S/U.)

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492. *Directed Study.* 1-6 Hr. Directed study, reading, and/or research.

493 A-Z. *Special Topics.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty

495. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Library Science (LS)

100. *Using Books and Libraries.* I, II. 1 Hr. Provides a working knowledge of library facilities, particularly of the University Library. Includes how and when to use basic reference sources and search strategy for term-paper preparation. Useful to any student in the University

401. *Reference and Bibliography.* I, II. 3 Hr. Basic reference materials in print and non-print formats (dictionaries, encyclopedias, indexes, yearbooks, computerized data bases, etc.) are studied and evaluated. Emphasizes theory of information seeking and practical experience with materials. Presently required for School Library Media certification in West Virginia.

403. *Literature for Children.* I, II. 3 Hr. A survey of children's literature including its historical development as well as current trends. Emphasizes selection, critical evaluation, and utilization of literary materials for developmental, recreational, and curriculum needs. Appropriate media included. Presently required for School Library Media Certification in West Virginia.

406. *Young Adult Literature.* I, II, 3 Hr. Survey of adolescent literature and other library materials (print and non-print for junior and senior high school students.) * Presently required for School Library Media Certification in West Virginia.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Linguistics (LING)

101. *Introduction to Language.* 3 Hr. General introduction to the nature of human language—its sounds, structure, mechanisms, and forms (oral/sign); its evolution and variation, how it is learned and stored, and how it differs from animal communications systems.

103. *Introduction to Language Comparison.* 3 Hr. (No previous language experience required.) Comparison of various Indo-European languages.

293. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

311. *Introduction to Structural Linguistics.* 3 Hr. PR: FRCH 203 or GER 203 or JAPN 203 or RUSS 203 or SPAN 203 or equivalent. Required for foreign language majors. A detailed examination of language structure (phonology, morphology, syntax, and semantics) and its relation to language use (sociolinguistics.)

401. *Structure of Spanish.* 3 Hr. PR: 18 hr. of Spanish and LING 311 or Consent. Description of the phonological or grammatical systems of Spanish, with emphasis on contrastive analysis (Spanish/English) and applied linguistics.

402. *Structure of Modern French.* 3 Hr. PR: 18 hr. of French and LING 311 or Consent. Study of phonology, morphology, and syntax of modern French together with a contrastive analysis of French and English.

403. *Structure of German.* 3 Hr. PR: 18 hr. of German and LING 311 or Consent. Phonological, morphological, and syntactical structure of contemporary German language.

404. *Structure of Russian.* 3 Hr. PR: 18 hr. of Russian and LING 311 or Consent. Phonological, morphological, and syntactical structure of contemporary Russian.

411. *Phonology.* 3 Hr. PR: LING 101 or LING 311. Description of sounds and sound systems in language. Articulatory phonetics. Structuralist and generative approaches to phonemics.

412. *Syntax.* 3 Hr. PR: LING 311 or Consent. Emphasis on generative syntax in English, German, Romance, and Slavic languages.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492. *Directed Study.* 1-6 Hr. Directed study, reading, and/or research.

493. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. *Seminar.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

495. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Management (MANG)

310. *Management of Small Business.* 3 Hr. PR: BCOR 370. Focusing on the management of small business, the course is designed both for those seeking employment in small business, and for those entering large organizations which deal with small firms as suppliers, customers, and competitors.

351. *Database Management Systems.* 3 Hr. PR: BCOR 330. Introduction to database theory, design, implementation, management, and models; development of database applications for management systems.

352. *Business Applications Programming.* 3 Hr. PR: BCOR 330. Provides an understanding of fundamental programming required to develop end-user business applications in an object-oriented, event-driven environment. These skills will be utilized in the *Systems Design and Development* course.

420. *Business Information Systems.* 3 Hr. PR: BCOR 330 and BCOR 370. Use of EDP for decision making with emphasis on application in the functions of finance, marketing, personnel, accounting, and operations management.

422. *The Individual and the Organization.* 3 Hr. PR: BCOR 370. Examination of how the individual, the group, and the organization interact to influence the behavior of the business organization and that of its human resources.

424. *Organizational Theory and Analysis.* 3 Hr. PR: BCOR 370. Influences of structure on the behavior and dynamics of the business organization, including emphasis on becoming an effective manager.

430. *Personnel Management.* 3 Hr. PR: BCOR 370. Fundamental principles and practices related to the procurement, development, maintenance, and utilization of human resources. Focus on areas such as human resource planning, selection training, performance appraising, compensation, safety and health, and labor relations.

432. *Personnel and Compensation.* 3 Hr. PR: MANG 430. Designing and implementing total compensation systems in both private and public sectors. The emerging elements of total compensation systems are included providing insights into problems and opportunities for personnel.

434. *Human Resource Management Research Methods.* 3 Hr. PR: MANG 430. Research methods and measurement in human resource management; philosophy of science, ethics in research, research design, and analytical methods.

438. *Entrepreneurship.* 3 Hr. PR: BCOR 370. The role of the entrepreneur in business and society; includes an analysis of the individual entrepreneur, and investigates the nature and problems of establishing a new business enterprise.

440. *Practicum in Small Business.* 3 Hr. PR: BCOR 370. A practical training ground in the identification and solution of small business problems. Through interaction with the business community, students are exposed to the opportunities and difficulties of small business entrepreneurship.

450. *Systems Analysis.* 3 Hr. PR: BCOR 330. Emphasizes the systems approach, concentrating on the first half of the systems development cycle: feasibility studies, cost/benefit analysis, organizational analysis, assessment of information needs, and project planning. Effective teamwork and communications are stressed.

452. *Systems Design and Development.* 3 Hr. PR: MANG 351 and MANG 352 and MANG 450. Follows the *Systems Analysis* course with the second half of the systems development cycle; user interface design, data design, process design, system specifications, use of software development tools, documentation, testing, conversion, and maintenance.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours). Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* 1-6 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Marketing (MKTG)

310. *Marketing Research.* 3 Hr. PR: BCOR 350. Scientific approach to the solution of marketing problems with emphasis on research methods and techniques.

315. *Consumer Behavior.* 3 Hr. PR: MKTG 310. The consumer decision process in a marketing framework. Emphasis on psychological and sociological concepts which influence the decision process.

320. *Personal Selling.* 3 Hr. PR: BCOR 350. Deals with interpersonal communication, influencing, and persuasion processes designed to satisfy customer and company needs; stresses the structure of sound sales presentations through lectures, persuasive presentations, and appraisal and correction of common selling errors.

330. *Distribution Channels.* 3 Hr. PR: BCOR 350. Management of channel systems with emphasis on retail distribution, channel choice, strategies, control, and optimization within the context of role, power, conflict, and communications.

340. *Promotion Management.* 3 Hr. PR: BCOR 350. An analysis of the promotional mix options; advertising; personal selling; and sales promotion, and the integration of these options into the marketing mix.

350. *Product and Price Policies.* 3 Hr. PR: BCOR 350. Deals with the company's product offering as economic and marketing variables influencing product's price; stress on determination of product and price objectives, planning, implementation, and evaluation of results.

400. *Global Marketing.* 3 Hr. PR: BCOR 350 plus six additional hours in marketing. Evaluation and analysis of marketing strategies in a global environment; examination of the relationships between international buyer behavior and the elements of the marketing mix.

410. *Retail Management.* 3 Hr. PR: BCOR 350. The organization and operating environment of retail firms. Special emphasis placed on consumer market segmentation and the marketing variables of merchandise mix, effective pricing, store location, and communication with suppliers and consumers.

420. *Sales Management.* 3 Hr. PR: BCOR 350. Concentrates on the managerial responsibilities of sales managers for directing, motivating, and controlling a sales force plus the techniques of selling, including objections and closing.

430. *Business Logistics Management.* 3 Hr. PR: MKTG 330. Examination of transportation, warehousing, materials handling, containerization, inventory control, purchasing, and warehouse location. Significant use made of problem solving with analytical tools.

460. *Business to Business Marketing.* 3 Hr. PR: BCOR 350. A study of marketing to three classes of customers: the commercial market, the institutional market, and government agencies.

470. *Marketing Management.* 3 Hr. PR: BCOR 350 and MKTG 310 and MKTG 315, and six hours of marketing or Consent. Simulation, through live and written case study, should sharpen skills as the student makes analytical evaluations of marketing problems.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-6 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Mathematics (MATH)

122. *Algebra.* I, II. 3 Hr. PR: One year of high school algebra. Covers the material of high school algebra through quadratics. Credits earned in MATH 22 are not counted in the 64 hours required for graduation in pre-baccalaureate programs at Potomac State College of WVU. (Not offered on the Morgantown campus—several alternative options are available, including a non-credit, student-funded *Pre-College Algebra Workshop*, which is designed specifically to prepare students for *College Algebra.*)

121. *Introductory Concepts of Mathematics.* I, II. 3 Hr. (Designed for non-science majors who do not need the techniques of mathematics for other coursework in their programs.) Topics in modern mathematics.

124. *College Algebra for Applications.* I, II, S. 3 Hr. PR: Two units of algebra, one unit geometry, and satisfactory performance on departmental placement exam; or successful completion of pre-college algebra workshop or its equivalent. Review of real number system and algebraic expressions, equations, inequalities, systems of equations and inequalities, graphing, functions, mathematics of finance, basic matrix operations, linear programming. This course is not open to students who have credit for MATH 126, MATH 129, or equivalents.

126. *College Algebra.* I, II, S. 3 Hr. PR: Two units of algebra, one unit of geometry, and satisfactory performance on departmental placement examination or successful completion of the *Pre-College Algebra Workshop* or its equivalent. (This course is not open to students who have credit for MATH 129 or its equivalent.) Review of the real number system and algebraic expressions, equations, inequalities, graphing, functions, basic matrix operations and properties systems of equations, polynomials, counting, and probability.

128. *Plane Trigonometry.* I, II. 3 Hr. PR: Two units of algebra, one unit of geometry, and satisfactory performance on departmental placement examination, or successful completion of the pre-college algebra workshop or its equivalent, or concurrently enrolled in MATH 129. (This course is not open to students who have credit for MATH 126 or its equivalent.) Trigonometric functions, identities, vectors, logarithms, complex numbers, and trigonometric equations.

129. *Pre-Calculus Mathematics.* I, II. 4 Hr. PR: Two units algebra and one unit geometry, and satisfactory performance on departmental placement test. Not open to students who have credit for the equivalent of either MATH 126 or 128.) A treatment of algebra, analytic geometry, and trigonometry.

150. *Introduction to Calculus.* I, II, S. 3 Hr. PR: MATH 126 or MATH 129 or MATH 124 or Consent. For students in other disciplines needing calculus for applications. Limits of sequences and functions, continuity, derivatives, and integrals of polynomials, rational functions, and exponential and logarithmic functions, partial derivatives, maxima and minima.

155. *Calculus 1.* I, II, S. 4 Hr. PR: Two units algebra, one unit geometry, one-half unit trigonometry, and satisfactory performance on departmental placement test or (MATH 126 and MATH 128) or MATH 129. Introduction to limits, continuity, derivatives, antiderivaties, definite integrals, and applications of the derivative.

156. *Calculus 2.* I, II, S. 4 Hr. PR: MATH 155. Techniques of integration, applications of the definite integral, polar coordinates, indeterminate forms, infinite series.

170. *Discrete Mathematics.* 3 Hr. PR: CS 111 or MATH 155. Traditional mathematics such as functions, relations, set theory, and graph theory; applications to computer science; switching circuits, Boolean algebra, and Karnaugh maps. Equiv. to CS 220. (Not offered on a regular basis.)

180. *Symbolic Logic 2.* I, II. 3 Hr. PR: PHIL 260. Continuation of PHIL 260, covering relational logic and identity. Additional topics may include alternative methods and systems of logic such as proof trees, axiom systems, alternative operators, modal and many-valued logics, and set theory. (Not offered on a regular basis.)

218. *History of Mathematics.* I. 3 Hr. PR: MATH 155. Development of mathematics through calculus, with emphasis on mathematical theories and techniques of each period and their historical evolution. (Not offered on a regular basis.)

222. *Numerical and Symbolic Methods in MATH/STAT.* I. 3 Hr. PR: MATH 156. Data manipulation, data visualization in two and three dimensions including animation, scientific programming using a high level language, symbolic manipulators, and other packages. Applications to problems in mathematics and statistics. (Equiv. to STAT 222.)

231. *Algebra and Geometry for Elementary Teachers.* I, II 3 Hr. PR: MATH 126. (For elementary education majors only.) Algebra, real numbers, and geometry applied to graphing, problem solving, probability and statistics, calculations, and the computer.

238. *Modern Geometry for Teachers.* I. 3 Hr. PR: MATH 156 or consent. (For prospective high school mathematics teachers.) Foundations of geometry. Special topics from Euclidean, projective, and non-Euclidean geometries.

251. *Multivariable Calculus.* I, II, S. 4 Hr. PR: MATH 156. Introduction to solid analytic geometry, vector algebra, matrix algebra, calculus of several variables.

261. *Elementary Differential Equations.* I, II, S. 4 Hr. PR: MATH 251. Ordinary differential equations, Laplace transforms, partial differential equations, Fourier series, applications.

280. *Mathematical Logic 1.* I. 3 Hr. PR: PHIL 260 or consent. The axiomatic method, "naive" and axiomatic set theory, Russell's Paradox, infinity and uncountability, the "reduction" of mathematics to set theory, introduction to the consistency and completeness of logic, and Godel's proof of the incompleteness of arithmetic. (Equiv. to PHIL 360.) (Not offered on a regular basis.)

283. *Introduction to the Concepts of Mathematics.* I, II. 3 Hr. PR: MATH 156 or consent. Elementary logic, basic theory, relations and functions, equivalence relations and decomposition of sets, order relations, cardinality. Emphasis on learning to prove theorems.

293. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

331. *Introduction to Mathematics for the Elementary Teacher 1.* I, II. 3 Hr. PR: MATH 126. (Not open to students who have credit for MATH 231.) (For in-service elementary mathematics teachers.) Systems of numeration; sets, relations, binary operations, the algebraic structure of various number systems; the notions of length, area, and volume; coordinate geometry.

332. *Introduction to Mathematics for the Elementary Teacher 2.* I, II. 3 Hr. PR: MATH 126. (Not open to students who have credit for MATH 231.) (For in-service elementary mathematics teachers.) Systems of numeration; sets, relations, binary operations, the algebraic structure of various number systems; the notions of length, area, and volume; coordinate geometry.

341. *Introduction to Algebraic Structures.* II. 3 Hr. PR: MATH 283 or consent. A study of groups, rings, and fields together with their substructures, quotients and products, morphisms; the fundamental homomorphism theorems.

343. *Introduction to Linear Algebra.* I. 3 Hr. PR: MATH 156. Introduction to vector spaces as an algebraic system. Emphasis on axiomatic development and linear transformation. Examples from geometry and calculus.

364. *Mathematics of Compound Interest.* II. 3 Hr. PR: MATH 156 or MATH 150. A problem-solving course focusing on the measurement of interest, annunities, amortization schedules, and sinking funds, and the valuation of bonds and other securities.

367. *Applied Mathematical Analysis.* II. 3 Hr. PR: MATH 261. The algebra and differential calculus of vectors, solution of the partial differential equations of mathematical physics, and application of functions of a complex variable.

375. *Applied Modern Algebra.* I. 3 Hr. PR: MATH 156. Finite fields, algebraic coding theory, Boolean algebras, monoids, finite state, and Turing machines.

378. *Discrete Mathematics.* II. 3 Hr. PR: MATH 283. Permutations, combinations, binominal theorem, inclusion-exclusion formula, recurrence relations, generating functions, elementary graph theory (connectivity, paths, circuits, trees, vertex and edge coloring, graph algorithms) matching theory, and discrete optimization. (Equiv. to CS 426.)

381. *Topology.* II, S. 3 Hr. PR: MATH 283 or consent. Introduction to metric and topologial spaces. Topics include: continuity, convergence, separation, compactness, and connectedness.

420. *Numerical Analysis 1.* I, II. 3 Hr. PR: MATH 251 and (either a programming language or MATH 222.) Computer arithmetic, roots of equations, interpolation, Gaussian elimination, numerical integration and differentiation. Numerical solution of initial value problems for ordinary differential equations. Least square approximations. (Equiv. to CS 460.)

421. *Numerical Analysis 2.* II. 3 Hr. PR: (MATH 420 or CS 460) and (MATH 441 or MATH 343). Solutions of linear systems by direct and iterative methods. Calculation of eigenvalues, eigenvectors, and inverses of matrices. Applications to ordinary and partial differential equations.

441. *Applied Linear Algebra.* I, II, S. 3 Hr. PR: MATH 251. Matrix algebra with emphasis on algorithmic techniques and applications to physical models. Topics include solution of large systems of equations, orthogonal projections and least squares, and eigenvalue problems.

451. *Introduction to Real Analysis 1.* I, II. 3 Hr. PR: MATH 283. A study of sequences, convergence, limits, continuity, definite integral, and derivative, differentials, functional dependence, multiple integrals, sequences, and series of functions.

452. *Introduction to Real Analysis 2.* I, II. 3 Hr. PR: MATH 451. A study of sequences, convergence, limits, continuity, definite integral, derivative, differentials, functional dependence, multiple integrals, sequences and series of functions.

455. *Advanced Real Calculus.* S. 3 Hr. PR: MATH 261. Limits, series, metric spaces, uniformity, integrals.

456. *Complex Variables.* II. 3 Hr. PR: MATH 261. Complex numbers, functions of a complex variable; analytic functions; the logarithm and related functions; power series; Laurent series and residues; conformal mapping and applications.

464. *Deterministic Math Modeling.* 3 Hr. PR: MATH 222 and MATH 261 and MATH 420; or consent. An introduction to mathematical modeling of deterministic systems. Topics include growth and decay models, equilibrium models, optimal control and utility, and model validation. Applications from chemistry, physics, biology, economics, and the environment will be considered.

465. *Partial Differential Equations.* II. 3 Hr. PR: MATH 261. Introduces students in mathematics, engineering, and the sciences to methods of applied mathematics. First and second order equations, canonical forms, wave, heat, and Laplace's equations, representation of solutions.

469. *Seminar in Applied Mathematics.* I, II. 1-12 Hr. PR: Consent. Selected topics in applied mathematics.

480. *Mathematical Logic 2.* 3 Hr. PR: MATH 280 or PHIL 360.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Mechanical and Aerospace Engineering (MAE)

Note: Except those marked with an asterisk (*), courses in MAE are open only to engineering majors.

211. *Mechatronics.* 3 Hr. PR: Sophomore standing in engineering. Selection of mechanical and electronic components and integration of these components into complex systems. Hands-on laboratory and design experiments with components and measurement equipment used in the design of mechatronic products. (2 hr lec., 3 hr. lab.)

215. *Introduction to Aerospace Engineering.* 3 Hr. PR: MATH 155 and ENGR 102. Fundamental physical quantities of a flowing gas, standard atmosphere, basic aerodynamic equations, airfoil nomenclature, lift, drag, and aircraft performance. Digital computer usage applied to aerodynamic and performance problems and aircraft design. (3 hr. lec.)

241. *Statics.* 3 Hr. PR: MATH 155. Engineering applications of equilibrium of forces. Vector operations, couple and moment of force, resultants (two and three dimensions), center of gravity and center of pressure, static friction, free-body diagrams, trusses, and frames. (3 hr. lec.)

242. *Dynamics.* 3 Hr. PR: MAE 241 and MATH 156. Newtonian dynamics of particles and rigid bodies. Engineering applications of equations of motion, work and energy, conservative forces, impulse and momentum, impulsive forces, acceleration in several coordinate systems, relative motion, instantaneous centers, and plane motion. (3 hr. lec.)

243. *Mechanics of Materials.* 3 Hr. PR: MAE 241 and MATH 156. Stress, deformation, and failure of solid bodies under the action of forces. Internal force resultants, stress, strain, Mohr's circle, mechanical properties of materials, generalized Hooke's Law. Axial, bending, and buckling loads and combinations. (3 hr. lec.)

244. *Dynamics and Strength Laboratory.* 1 Hr. PR or strength of materials. Mechanical properties and Conc: MAE 242 and MAE 243. Basic experiments in dynamics and stress-strain curves of materials for tension, shear and tension, shear and torsion. Electrical resistance strain gages, stress concentrations through fringe pattern analysis, friction, wear, hardness, fatigue, and fracture of metals. Structural dynamics of vibrating beams. (3 hr. lab.)

316. *Analysis of Engineering Systems.* 3 Hr. PR: ENGR 102 and MATH 261 and MAE 242. Analytical, numerical, and computational techniques to analyze and solve engineering problems. Mathematical modeling, solution strategies, and analysis of results. Statistical techniques including probability distribution functions, regression analysis, and curve fitting.

320. *Thermodynamics.* 3 Hr. PR: PHYS 111 and MATH 156. Principles of thermodynamics; properties of ideal gases and vapors; first and second laws of thermodynamics; basic gas and vapor cycles; basic refrigeration. (3 hr. lec.)

321. *Applied Thermodynamics.* 3 Hr. PR: MAE 320. Applications to mechanical systems of fundamentals from thermodynamics; availability analysis; applied gas and vapor power cycles; applied refrigeration and psychrometry; mixtures of real gases and vapors; combustion; choked flow nozzles. (3 hr. lec.)

322. *Thermal and Fluids Laboratory.* 1 Hr. PR: MAE 320. Experiments demonstrating fundamental concepts of thermal-fluid systems; hydrostatics, dynamic pressure forces, dimensional analysis, pipe pressure losses, drag on external bodies, flow measurements devices, engine performance, fan and turbine performance, saturated vapor curve determination. (3 hr. lab.)

331. *Fluid Mechanics.* 3 Hr. PR: MAE 241. Fluid statics, laminar and turbulent flow of compressible and incompressible fluids, flow measurements, open channel flow, and kinetics of fluids. (3 hr. lec.)

335. *Incompressible Aerodynamics.* 3 Hr. PR: MATH 251 and MAE 215. Dynamics of vector fluid flow fields, ideal fluid flow. Introduction to viscous boundry layers. Airfoil theory. Finite-wing theory.

336. *Compressible Aerodynamics.* 3 Hr. PR: MAE 320 and (MAE 215 or MAE 331). Analysis and design of compressible, inviscid flows; isentropic flow, shock waves, Prandtl-Meyer expansions, supersonic nozzles and diffusers. Airfoils in copressible flow and small perturbation theory, introduction to hypersonic-flow theory.

342. *Dynamics of Machines.* 3 Hr. PR: MAE 242 and PR or Conc: MATH 261. Analysis of motion and forces in linkages, cams, and gears. Fundamentals of free and forced, undamped and damped vibration of mechanical systems.

343. *Intermediate Mechanics of Materials.* 3 Hr. PR: MAE 243. Introduction to material science. Introduction to elasticity. Strength under combined stresses. Energy methods. Column theory. Unsymmetric bending. Fundamentals of fatigue and fracture.

345. *Aerospace Structures.* 3 Hr. PR: MAE 343. Torsion of thin-walled beams. Flexural shear flow. Thermal analysis of aerospace structures. Introduction to composite materials. Buckling of plates.

365. *Flight Dynamics.* 3 Hr. PR: MAE 242 and MAE 335. Aircraft equations of motion. Modeling of aerodynamic forces and moments. Aircraft static and dynamic stability. Solution of equations of motion via Laplace transformation. Transfer functions. Simulation of open-loop aircraft dynamics. Aircraft handling qualities.

370. *Aviation Ground School.* 3 Hr. Nomenclature of aircraft, aerodynamics, civil air regulations, navigation, meteorology, aircraft, and aircraft engines. May serve as preparation for private pilot written examinations. (2 hr. lec., 2 hr. lab.) (Not approved as a technical elective.)

411. *Advanced Mechatronics.* 3 Hr. PR: MATH 261 and MAE 211 and PR: or Conc: EE 307. Instrumentation and measurements emphasizing systems that combine electronic and mechanical components with modern controls and microprocessors. First and s econd order behavior, transducers and intermediate devices, measurement of rapidly changing engineering parameters, microcontrollers, and actuators. (2 hr. lec., 3 hr. lab.)

421. *Problems in Thermodynamics.* 3 Hr. PR: MAE 321 or Consent. Thermodynamic systems with special emphasis on actual processes; problems designed to strengthen the background of the student in the application of the fundamental thermodynamic concepts. (3 hr. lec.)

423. *Heat Transfer.* 3 Hr. PR: MAE 320. Steady state and transient conduction. Thermal radiation. Boundary layer equations for forced and free convection. (3 hr. lec.)

424. *Applications in Heat Transfer.* 3 Hr. PR: MAE 423. Application of basic heat transfer theory and digital computation techniques to problems involving heat exchangers, power plants, electronic cooling, manufacturing processes, and environmental problems. (3 hr. lec.)

425. *Internal Combustion Engines.* 3 Hr. PR: MAE 320. Thermodynamics of the internal combustion engine; Otto cycle; Diesel cycle, gas turbine cycle, two- and four-cycle engines, fuels, carburetion and fuel injection; combustion; engine performance, supercharging. (3 hr. lec.)

426. *Flight Vehicle Propulsion.* 3 Hr. PR: MAE 336. Equilibrium combustion thermodynamics. Quasi one-dimensional flow with friction and total temperature change. Thermodynamics of aircraft engines. Aerodynamics of inlets, combustors, nozzles, compressors, and turbines. Performance of rockets. Ideal rocket analysis. (3 hr. lec.)

427. *Heating, Ventilating, and Air Conditioning.* 3 Hr. PR: MAE 321 or Consent. Methods and systems of heating, ventilating, and air conditioning of various types of buildings, types of controls and their application. (3 hr. lec.)

432. *Engineering Acoustics.* 3 Hr. PR: MATH 261 or Consent. Theory of sound propagation and transmission. Important industrial noise sources and sound measurement equipment. Selection of appropriate noise criteria and control methods. Noise abatement technology. Laboratory studies and case histories. (3 hr. lec.)

434. *Experimental Aerodynamics.* 2 Hr. PR: MAE 336 and ENGL 102. Aerodynamic testing and instrumentation. Supersonic and low-speed wind tunnel testing including shock waves, aerodynamic forces, pressure distribution on an airfoil and boundary layers. Application of schlieren optics, thermal anemometry, and laser doppler velocimetry. (1 hr. lec., 3 hr. lab.)

435. *Experimental Fluid Dynamics 2.* 3 Hr. PR: MAE 434. Continuation of MAE 434 with increased emphasis on dynamic measurements. Shock tube/tunnel and subsonic and supersonic measurements. Experiments include optical techniques, heat transfer to models, and viscous flow measurements. Error analysis of test data. (2 hr. lec., 3 hr. lab.)

436. *Applied Aerodynamics.* 3 Hr. PR: MAE 335. Chordwise and spanwise airload distribution for plain wings, wings with aerodynamic and geometric twist, wings with deflected flaps, and wings with ailerons deflected. Section induced drag characteristics. (3 hr. lec.)

437. *V/STOL Aerodynamics.* 3 Hr. PR: MAE 336. Fundamental aerodynamics of V/STOL aircraft. Topics include propeller and rotor theory, helicopter performance, jet flaps, ducted fans, and propeller-wing combinations. (3 hr. lec.)

438. *Introduction to Gas Dynamics.* 3 Hr. PR: MAE 331 or Consent. Fundamentals of gas dynamics, one-dimensional gas dynamics and wave motion, measurement, effect of viscosity and conductivity, and concepts of gas kinetics. (3 hr. lec.)

439. *Hypersonic Gas Dynamics.* II. 3 Hr. PR: MAE 336 or Consent. Hypersonic shock and expansion wave relations; hypersonic inviscid flowfields: approximate and numerical methods, blast wave theory; hypersonic boundary layers and aerodynamic heating. (3 hr. lec.)

446. *Mechanics of Composite Materials.* 3 Hr. PR: MATH 251 and MAE 243. Fundamental methods for structural analysis of fiber-reinforced composites. Particularities of composite applications in design and manufacturing of structural components: performance tailoring, failure criteria, environmental effects, joining and processing. (3 hr. lec.)

447. *Aeroelasticity.* 3 Hr. PR: MAE 345. Vibrating systems of single degree and multiple degrees of freedom, flutter theory and modes of vibration, torsional divergence and control reversal. (3 hr. lec.)

452. *Kinematics.* 3 Hr. PR: MAE 342 and MATH 261 or Consent. Geometry of constrained motion, kinematics synthesis and design, special linkage. Coupler curves, inflection circle, Euler-Savary equation, cubic of stationary curvature, and finite displacement techniques. (3 hr. lec.)

454. *Machine Design and Manufacturing.* 3 Hr. PR: MAE 342 and MAE 343. Mechanical design of mechanical elements such as shaft systems, bearings, gears, springs, screws and fasteners, clutches and brakes, and flexible drive elements. Design for manufacturability considerations.

456. *CAD and Finite Element Analysis.* 3 Hr. PR: (MAE 342 or MAE 345) and MAE 343. Computer-aided design fundamentals, Finite element concepts and solution techniques. Exposure to CAD and finite element packages. Design case studies.

460. *Automatic Controls.* 3 Hr. PR: MAE 316. Time and frequency domain modeling of physical systems. Open-loop and closed-loop transfer functions. Time response, stability and steady-state errors of control systems. Root-locus techniques. Compensator design. Frequency response.

461. *Applied Feedback Control.* 3 Hr. PR: MAE 460 or Consent. Application of automatic control theory. Transfer functions and block diagrams for linear physical systems. Proportional, integral, and derivative controllers. Transient and frequency response using Laplace transformation. (3 hr. lec.)

462. *Design of Robotic Systems.* 3 Hr. PR: Consent. Mechanical automation design associated with robotic systems, including economic justification and ethics. Geometric choices and controller specifications for programmable manipulators. Workstation strategies such as CNC and CIM for computer-based flexible manufacturing. (3 hr. lec.)

465. *Flight Mechanics 2.* 3 Hr. PR: MAE 365. Fundamental concepts of feedback control system analysis and design. Automatic flight controls, and human pilot plus airframe considered as a closed loop system. Stability augmentation. (3 hr. lec.)

466. *Flight Testing.* 3 Hr. PR: MAE 365. Applied flight test techniques and instrumentation, calibration methods, determination of static performance characteristics, and introduction to stability and control testing based on flight test of Cessna Super Skywagon airplane. Flight test data analysis and report preparation. (1 hr. lec., 6 hr. lab.)

469. *Microprocessor Applications in Mechanical Engineering.* 3 Hr. PR: MAE 363. Fundamentals of programming and interfacing a microprocessor. Hands-on, hardware oriented. Assembly language and BASIC programming. RAM, EPROM, analog to digital and digital to analog converters, stepper motors, encoders, AC devices. Interfacing project required. (3 hr. lec.)

471. *Principles of Engineering Design.* 3 Hr. PR: Penultimate semester. Topics include design problems in mechanical engineering dealing with analytical and experimental methodologies in fluid, thermal, and structural areas, decision-making techniques, optimization, computer-aided design, and economic consideration. (6 hr. lab.)

472. *Engineering Systems Design.* 3 Hr. PR: MAE 471. Identification and solution of challenging engineering problems through rational analysis and creative synthesis. Planning, designing, and reporting on complex systems on individual and group basis. (6 hr. lab.)

473. *Bioengineering.* 3 Hr. PR: MAE 243 or Consent. Introduction to human anatomy and physiology using an engineering systems approach. Gives the engineering student a basic understanding of the human system so that the student may include it as an integral part of the design. (3 hr. lec.)

475. *Flight Vehicle Design.* 3 Hr. PR: ENGL 102 and MAE 215 and MAE 365 or Consent. Preliminary design of flight vehicles; with regard for performance and stability requirements, considering aerodynamics, weight and balance, structural arrangement, configuration, cost safety, guidance, and propulsion effects. (1 hr. lec., 6 hr. lab.)

476. *Space Flight and Systems.* 3 Hr. PR: MAE 316. Introduction to fundamental concepts of space flight and vehicles, emphasizing performance aspects and basic analytical expressions. Common analysis methods and design criteria for launch vehicles, orbital mechanics, atmospheric re-entry, stabilization, thermal, power, and attitude control.

477. *Space Systems Design.* II. 3 Hr. PR: MAE 475 or MAE 471. Conceptual and/or preliminary design of space vehicles and/or systems including structures, CAD, orbital mechanics, propulsion, thermal control, life support, power systems, communications, system integration and cost analysis. (1 hr. lec., 6 hr. lab.)

478. *Guided Missile Systems.* 3 Hr. PR: MAE 336 and PR or Conc: MAE 426. Design philosophy according to mission requirements. Preliminary configuration and design concepts. Aerodynamic effects on missiles during launch and flight. Ballistic missile trajectories. Stability determination by analog simulation. Performance determination by digital and analog simulation. Control, guidance, and propulsion systems. Operational reliability considerations. (3 hr. lec.)

479. *Space Mechanics.* 3 Hr. PR: MATH 261 and MAE 242. Flight in and beyond earth's atmosphere by space vehicles. Laws of Kepler and Orbital theory. Energy requirements for satellite and interplanetary travel. Exit from entry into an atmosphere. (3 hr. lec.)

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

497. *Research.* I, II, S. 1-6 Hr. Independent research projects.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Medical Technology (MTEC)

100. *Medical Technology.* 1 Hr. Introduction to the profession of medical technology and the clinical laboratory specialties. (Grading will be Pass/Fail.)

101. *Medical Technology 2.* II. 1 Hr. Continuation of MTEC 100.

200. *Medical Technology Terminology.* 1 Hr. General medical and basic medical technology terminology. (Grading will be Pass/Fail.)

201. *Basic Medical Technology.* 1 Hr. Basic medical technology laboratory techniques and professional issues related to medical technology. (Grading will be Pass/Fail.)

300. *Medical Techniques 1.* 4 Hr. PR: Acceptance into the Medical Technology program as a first-year student or consent by director. Clinical Laboratory procedures employed in patient diagnosis in the areas of blood coagulation, blood banking, hematology, and clinical microscopy.

301. *Medical Technology 2.* 4 Hr. Continuation of MTEC 100.

302. *Laboratory Math, Quality Control, Computers.* 2 Hr. Lectures and practice sessions in laboratory mathematics, techniques, and calculations in quality control, quality assurance. Computer acquisition and evaluation.

310. *Clinical Laboratory Mycology.* 1 Hr. How to isolate and identify the more commonly encountered pathogenic fungi as well as those fungi frequently seen as laboratory contaminants. The course will include basic taxonomy, isolation procedures, and identifying characteristics.

329. *Basic Clinical Chemistry.* 1 Hr. PR: Students in Medical Technology program. Basic clinical chemistry procedures and theory. (1 hr. lec.)

381. *Research, Educational Methodology.* 2 Hr. Lectures in ethics, techniques of research, and techniques of educational methodology for medical technology students.

400. *Orientation.* No credit. (For senior students). Principles and practices of medical technology in relation to the hospital and clinics. (Grading will be Pass/Fail.)

401. *Phlebotomy.* 1 Hr. PR: Enrollment in Medical Technology program, MTEC 300 and MTEC 301. Clinical laboratory practice, including venipuncture, finger sticks, and heel sticks; isolation, universal precaution, and other safety techniques are included.

402. *Rural Health Practicum.* 1 Hr. PR: Senior year MT program. Enrichment rotations in rural settings in West Virginia. (Grading will be Pass/Fail.)

403. *Community Service Practicum.* 1 Hr. PR: Senior year MT program. Students will spend time performing community service projects. (Grading will be Pass/Fail.)

404. *Forensic Quality Assurance.* 1 Hr. PR: Student currently enrolled in FIDP. Quality assurance in a laboratory setting to include quality control. Quality assurance, and management techniques necessary to have an accredited laboratory.

420. *Immunohematology and Blood Banking.* 2 Hr. Lectures on immunohematology and blood banking theory and practice.

421. *Immunohematology and Blood Banking Laboratory.* Arranged. 5 Hr. Clinical laboratory practice in blood banking procedures. Emphasis on procedures required for collection and preparation of blood and blood components for transfusion, special techniques, antibody studies, and problem solving.

430. *Clinical Chemistry.* 2 Hr. Lectures on principles of clinical chemistry procedures, clinical significance, and implication in diagnosis.

431. *Clinical Chemistry Laboratory.* Arranged. 5 Hr. Practice in the clinical chemistry laboratory.

440. *Clinical Hematology and Coagulation.* 2 Hr. Lectures in hematologic theory, coagulation, and practice.

441. *Clinical Hematology and Coagulation Laboratory.* 5 Hr. Application of hematological principles and coagulation to laboratory medicine. Emphasis on routine and specialized procedures, evaluation, and problem solving.

450. *Clinical Microbiology.* 2 Hr. Presentation and discussion of current methodology employed in the processing of clinical microbiology specimens, isolation, and identification of pathogenic microorganisms, and determination of antimicrobial sensitivities.

451. *Clinical Microbiology Laboratory.* Arranged. 5 Hr. Practice in the clinical microbiology laboratory to include isolation and identification of microorganisms; processing of specimens and antibiograms. Includes experiences in pathogenic mycology, virology, and parasitology.

460. *Clinical Laboratory Instrumentation.* 2 Hr. Principles of clinical laboratory instrumentation for medical technologists including principles of operation, maintenance, and troubleshooting.

465. *Clinical Laboratory Management*. 2 Hr. Laboratory organization and principles of laboratory management.

466. *Laboratory Management Practicum*. 1 Hr. PR: MTEC 465. Problem based learning and clinical laboratory management rotation. Application of management learned in MTEC 465. (Grading will be Pass/Fail.)

470. *Clinical Microscopy*. 1 Hr. PR: Senior standing in Medical Technology or consent. The analepis of body fluids (urine, fluids, etc.) for abnormalities.

471. *Clinical Microscopy Laboratory*. 1 Hr. PR: Senior standing in Medical Technology, or consent. Laboratory Practicum in urinalysis and other procedures.

475. *Medical Relevance*. 2 Hr. Case studies of pathologic entities encountered in the Clinical Laboratory. Students will complete and give and oral presentation of the Capstone Experience. (Grading will be Pass/Fail.)

480. *Clinical Immunology*. 2 Hr. Open only to MTEC Students. Lectures in principles of immunological and serological procedures, immunological diseases, and significance of laboratory methods for diagnosis.

481. *Clinical Immunology Laboratory*. 1 Hr. PR: Senior year MT Program. Clinical laboratory practice in immunological procedures. Emphasis on basic serological techniques, protein analysis, molecular methods, and tissue typing.

490. *Teaching Practicum*. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience*. 1-18 Hr. PR: Consent (may be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics*. 1-6 Hr.

494. *Seminar*. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study*. 1-6 Hr.

496. *Senior Thesis*. 1-3 Hr. PR: Consent.

498. *Honors*. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Military Science (MILS)
Army ROTC

101. *Military Science*. 2 Hr. The organization and development of the U.S. Army and ROTC from its inception to the present. The structure and role of the U.S. defense establishment with emphasis on the broad range of America civil-military relations.

102. *Military Science*. 2 Hr. The development of American military institutions, policies, experience, and examined in the perspective of modern military thought. Traditions in peace and war are discussed. Past wars are examined in the prospective of modern military thought.

201. *Military Science*. 2 Hr. Introduction to basic leadership and management with emphasis on the fundamental concepts and skills required of today's citizen-soldier.

202. *Military Science*. 2 Hr. Continued instruction in basic fundamentals of leadership and management, with emphasis on the military application of these fundamentals. Introduction to small unit tactics and organization.

301. *Military Science*. 3 Hr. PR: Basic course or equiv. (Equivalent credit may be granted by the WVU director of Admissions and Records and the professor of Military Science on the basis of prior military services, or ROTC training other than courses in Military Science taken at WVU.) Examines the requirements for military training and the psychological and technical aspects of effective instruction. Additionally, the military career system and the occupational specialties options available are reviewed.

302. *Military Science*. 3 Hr. PR: MILS 301 or Consent. Race relations/drug abuse seminars are conducted to familiarize students with the leadership techniques involved in coping with these unique social problems. Additionally, practical training is conducted in squad- and -platoon-level tactics. The course is designed to prepare students for advanced camp.

401. *Military Science*. 3 Hr. PR: MILS 301 and MILS 302 or Consent. Stresses the responsibilities of an officer and affords leadership experience as a cadet leader. Military staff procedures, military law, and military organizations, which prepare the student for future services, are studied.

402. *Military Science*. 3 Hr. PR: MILS 401 or Consent. Advanced leadership techniques, unit operations, and personnel management problems are discussed in seminars. The military role in United States foreign policy and world affairs is examined.

493 A-Z. *Special Topics*. I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar*. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study*. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

Minerals (M)

105. *Energy in Appalachia.* I. PR: None. Introduction to coal, oil, and natural gas industries in Appalachia; emphasis on social, cultural, economic, and technical developments.

190. *Teaching Practicum.* 1-3 Hr.

191 A-Z. *Special Topics.* 1-3 Hr.

194. *Professional Field Experience.* 1-18 Hr.

195. *Seminar.* 1-3 Hr.

196. *Senior Thesis.* 1-3 Hr.

197. *Honors.* 1-3 Hr.

250. *Evaluating Capital and Operating Costs.* 3 Hr.

281. *Applied Mineral Computer Methods.* I. 3 Hr. PR: ENGR 2 and MATH 16. Problem solving in mineral processing, mineral resources, mining, and petroleum engineering. Emphasis on applications using various computing technologies.

Mining Engineering (MINE)

201. *Mine Surveying.* I. 3 Hr. Principles of surveying; field experience in underground and surface surveying with map work and calculations.

205. *Underground Mining Systems.* II. 3 Hr. PR: GEOL 101. Underground mining methods and equipment for bedded deposits and ore bodies; description and selection of mining methods, equipment requirements and selection, equipment design, and operational analysis.

206. *Surface Mining Systems.* II. 4 Hr. PR: GEOL 101. Surface mining methods, surface mining equipment, explosives and blasting design, fundamentals, slope stability, and surface mine design.

261. *Engineering CAD.* I. 1 Hr. Engineering CAD concepts and techniques; implementing applications of engineering computer aided design for engineering graphics and plant design; introduction of geometry and calculation of engineering works.

293 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

304. *Mining Methods for Vein Deposits.* I. 3 Hr. PR: ENGR 102 and GEOL 342 and MATH 156. Methods and systems of mining other than flat seams. Emphasis on selection of methods in relation to cohesive strength of ore bodies and their enclosing wall rocks. Mining of anthracite included.

305. *Coal Mining.* I. 3 Hr. PR: Junior standing or Consent. (Not open to mining engineering students.) Introduction to elements of coal mining.

306. *Mining Exploration and Evaluation.* I. 3 Hr. PR: GEOL 342 and STAT 211. Methods and procedures for mineral reconnaissance and exploration; geological considerations, various prospecting and exploration techniques, reserve estimation, and engineering economy.

324. *Special Subjects for Mining Engineering.* I, II. 1-6 Hr. PR: Senior or graduate standing or Consent. Special problems in mining engineering, including choices among operations research, mine systems analysis, coal and mineral preparation, and coal science and technology.

331. *Mine Ventilation.* II. 3 Hr. PR: MINE 205. Engineering principles, purposes, methods, and equipment applied to the underground ventilation.

342. *Mine Health and Safety.* II. 3 Hr. PR: MINE 205 and MINE 206. The nature of the federal and state laws pertaining to coal mine health and safety; emphasis will be placed on achieving compliance through effective mine planning, design, and mine health and safety management.

343. *Industrial Safety Engineering.* I. 3 Hr. PR: Junior standing or Consent. Problems of industrial safety and accident prevention, laws pertaining to industrial safety and health, compensation plans and laws, and industrial property protection.

376. *Mine and Mineral Reserve Valuation.* I. 3 Hr. PR: Senior standing. Methods used to value mineral properties; factors affecting value of mineral properties.

381. *Applied Mineral Computer Methods.* I. 3 Hr. PR: ENGR 102 and Math 156. Problem solving in mineral processing, mineral resources, mining, and petroleum engineering. Emphasis on applications using various computing technologies.

407. *Longwall Mining.* II. 3 Hr. PR: MINE 205. Elements of longwall mining including panel layout and design considerations, strata mechanics, powered supports, coal cutting by shearer or plow, conveyor transportation, auxiliary systems, and face move.

411. *Rock Mechanics and Ground Control.* I. 4 Hr. PR: MINE 205 and MINE 206 and MAE 241 and MAE 243 and GEOL 342. Rock properties and behavior, in-situ stress field, mine layout and geological effects; design of entry, pillar, bolt systems, longwall support system and cribs, convergence and stress measurements, surface subsidence, roof control plan, and laboratory sessions.

414. *Rock Mechanics.* I. 3 Hr. PR: MAE 243 or Consent. Elastic and plastic properties of rock, Mohr's criteria of failure, elastic theory, stress distributions around underground openings, open pit and underground stability, rock testing techniques.

427. *Coal Preparation.* 4 Hr. PR: MATH 156 and CHEM 116. Coal formation, petrography, and characteristics; principles of coal beneficiation, washability analysis and coking; colloid characteristics and flotation unit operations of concentration, flotation, agglomentation, dewatering, and tailings disposals.

471. *Mine and Safety Management.* II. 3 Hr. PR: MINE 205 and MINE 206. Economic, governmental, social, regulatory cost, labor, environmental, and safety aspects of mining as related to the management of a mining enterprise.

481. *Mine Plant Design.* II. 3 Hr. PR: Senior standing. Layout, analysis, and detailing of the major mine installations, and support facilities. Locations include: the surface plant, shaft and slope stations, section centers. Systems dealt with are bulk handling, power, ventilation, supplies, water, and personnel.

483. *Mine Design-Reserve Mapping.* 1 Hr. PR: MINE 261 and MINE 306 and Senior standing. A mineral or ore reserve is selected for the capstone mine design project by student and instructor. Geologic, demographic, quality, and market data are integrated with computer mapping software to make a set of maps.

484. *Mine Design-Report 2.* 3 Hr. Conc: MINE 411. PR: MINE 483 and Senior standing. Capstone mine design project report and presentation based on the mineral or coal reserve characterized in MINE 483. Includes an integrated mine plan, schedule, equipment selection, processing plant, mine services, product description, and engineering economics.

485. *Mine Systems Design.* I. 3 Hr. PR: MINE 205 and MINE 206 or Consent. Each student selects and designs a mine subsystem under specified conditions, including extraction, transportation, ventilation, roof control, exploration, plant design, surface facilities, etc. (2 hr. lec., 1 hr. lab.)

486. *Fire Control Engineering.* II. 3-4 Hr. PR: Senior standing. Aspects involved in the control from fire, explosion, and other related hazards. Protective considerations and building design and construction. Fire and explosive protection organization including fire detection and control. (3 hr. lec. and/or 3 hr. lab.)

487. *Applied Geophysics for Mining Engineers.* I. 3 Hr. PR: MINE 205 and MINE 206 and PHYS 112 and GEOL 342 or Consent. Origin of the universe and the planets, heat and age of the earth. Application of the science of geophysics in the location and analysis of earthquakes and in prospecting for oil and minerals.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Multidisciplinary Studies (MDS)

103. *Introduction to Library Research.* I, II. 1 Hr. Teaches basic library research skills focusing on the WVU Libraries, on-line catalog and various indexing tools used to find books and periodical articles. Incorporates hands-on practice with electronic and conventional resources for term paper preparation.

120. *Genetics, Society, and Human Affairs.* II. 3 Hr. (May be credited to University LSP Cluster B or C.) Origin of life, selection, mutation, eugenics, genetic engineering, genetics and evolution, genetics and medicine, genetics and politics, decision making, social, and ethical issues in human genetics. For students interested in heredity and heritage.

122. *Human Sexuality.* I, II. 3 Hr. (May be credited to University LSP Cluster B or C.) A study of the biological, behavioral, and societal aspects of sexuality. Issues considered include: changing fecundity, socio-legal implications, sex roles, venereal disease, populations, erotica, aging, dysfunctions, decision-making skills for sex-related issues.

124. *The Human Environment.* I. 3 Hr. (May be credited to University LSP Cluster B or C.) An examination of some of the facets of the environmental deterioration and corrective public policies. An interdisciplinary, non-prerequisite course for all students in the University.

126. *Society and Food.* I, II. 3 Hr. (May be credited to University LSP Cluster B or C.) Exploration on a global basis of interactions of man and environment as reflected in food production systems. Relation of food supply and use to development or maintenance of social and political institutions.

128. *Introduction to Technology and Society 1.* I, II. 3 Hr. (May be credited to University LSP Cluster A or C.) A team-taught introduction to technology and society in the Victorian era.

129. *Introduction to Technology and Society 2.* I, II. 3 Hr. PR: MDS 128. (May be credited to University LSP Cluster B.) Continuation of MDS 128.

212. *Introduction to Gerontology.* I, II. 3 Hr. PR: Sophomore standing. (May be credited to University LSP Cluster B.) Introduction to biological, psychological, and sociological processes and problems associated with human aging, with attention to selected social policies.

220. *Introductory African and African-American Studies.* 3 Hr. An interdisciplinary introduction to the histories, economics, cultural and artistic heritages; political and social formations of Africans and African-Americans; focusing on the relationships between the two experiences.

230. *Introduction to Celtic Studies.* 3 Hr. PR: ENGL 101. A team-taught, multi-disciplinary course focusing on ancient and contemporary Celtic cultures (Britany, Cornwall, Ireland, Isle of Man, Scotland, Wales). Course topics include history, religion, myth, literature, language, politics, art, and music.

293 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

301. *Creativity, Discovery, Innovation.* 3 Hr. Creativity as process; critical thinking and problem solving as enhancements of creative imagination; relationships of creativity to society and technology.

312. *Issues in Gerontology.* I, II. 3 Hr. PR: Consent. Analysis of societal aspects of aging and exploration of current issues in gerontology. Relating of gerontological concepts to previous coursework and field experience.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

497. *Research.* I, II, S. 1-6 Hr. Independent research projects.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Music (MUSC)

100. *Band: Wind Symphony.* I, II. 0-2 Hr. (May be repeated for credit.)

100 A. *Band: Concert Band.* I, II. 0-2 Hr. (May be repeated for credit.)

100 B. *Band: Varsity Band.* I, II. 0-2 Hr. (May be repeated for credit.)

100 C. *Band: Symphonic Band.* I, II. 0-2 Hr. (May be repeated for credit.)

100 D. *Band: Marching Band.* I, II. 0-2 Hr. (May be repeated for credit.)

101. *Glee Club.* 1 Hr.

102. *University Choral Union.* I, II. 0-1 Hr. (May be repeated for credit.)

103. *Orchestra.* I, II. 0-2 Hr. (May be repeated for credit.) University-community symphony orchestra, opera orchestra, musical theatre orchestra.

104. *Introduction to Opera Theatre.* I, II. 0-4 Hr. (May be repeated for credit; max. 16 Hr.) PR: Consent. Practical work in all aspects of lyric theatre production. Development of lyric theatre stage technique through movement studies, performance in major and minor roles and operatic scenes, and advanced production techniques.

105. *University Choir.* I, II. 0-2 Hr. (May be repeated for credit.)

105 A. *University Choir: Concert.* I, II. 0-2 Hr. (May be repeated for credit.)

106. *Applied Music: Bassoon.* I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

107. *Applied Music: Cello.* I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

108. *Applied Music: Clarinet.* I, II, 1-4 Hr. (May be repeated for credit.) Audition for placement required.

109. *Applied Music: Euphonium.* I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

110. *Applied Music: Flute.* I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement is required.

111. *Applied Music: Guitar.* I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

112. *Applied Music: Jazz.* I, II. 1-4 Hr. (May be repeated for credit.) Admitted by audition. Weekly lesson and attendance at the jazz seminar addressing issues related to jazz performance, technology, pedagogy, and business aspects of music.

113. *Applied Music: Harpsichord.* I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

114. *Applied Music: Horn.* I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

115. *Applied Music: Oboe.* I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

116. *Applied Music: Percussion.* I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

117. *Applied Music: Percussion Drum Set.* I, II. (May be repeated for credit.) Audition for placement required.

118. *Applied Music: Piano.* I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

119. *Applied Music: Pipe Organ.* I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

120. *Applied Music: Saxophone.* I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

121. *Applied Music: String Bass.* I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

122. *Applied Music: Trombone.* I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

123. *Applied Music: Trumpet.* I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

124. *Applied Music: Tuba.* I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

125. *Applied Music: Viola.* I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

126. *Applied Music: Violin.* I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

127. *Applied Music: Voice.* I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

130. *Piano Class Level 0.* I, II. 1 Hr.

131. *Piano Class Level 1/2.* I, II. 1 Hr. Audition for placement is required.

132. *Piano Class Level 1.* I, II. 1 Hr. Audition for placement is required.

134. *Piano Class Level 1 1/2.* I, II 1 Hr. Audition for placement is required.

134. *Piano Class Level 2-2 1/2.* I, II. 1-2 Hr. (May be repeated for credit.) Audition for placement is required.

135. *Piano Class Advanced.* I, II. 1-2 Hr. (May be repeated for credit.) Audition for placement is required.

136. *Guitar Class 1.* I, II. 1 Hr. (May be repeated for credit.)

137. *Guitar Class 2.* I, II. 1 Hr. (May be repeated for credit.) PR: MUSC 136 or permission.

138. *Voice Class 1.* I, II. 1-2 Hr. (May be repeated for credit).

139. *Voice Class 2.* I, II. 1-2 Hr. (May be repeated for credit.) PR: MUSC 139 or permission.

140. *Chamber Music: Brass.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

141. *Chamber Music: Guitar.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

142. *Chamber Music: Piano-4 Hand.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

143. *Chamber Music: Strings.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

144. *Chamber Music: Woodwind.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

145. *Chamber Music: Vocal.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

146. *Chamber Music: Mixed Ensemble.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

147. *Chamber Music: Mountaineer Singers.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

148. *Chamber Music: New Music.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

149 A-Y. *Chamber Music: Other.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

149 A. *Chamber Music: Brass Choir.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

149 Z. *Collegium Musicum.* I, II. 1-2 Hr. (May be repeated for credit.) PR: Consent. Study of outstanding musical works not in the standard repertory. Performance of vocal and instrumental music, investigation of performance practices, preparation of editions, and direction of rehearsals under supervision.

150. *Chamber Music: Freshman Percussion.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

151. *Chamber Music: Percussion 1.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

152. *Chamber Music: Percussion 2.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

153. *Chamber Music: Percussion 3.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

154. *Chamber Music: Gamelan.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

155. *Chamber Music: Steel Band 1.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

156. *Chamber Music: Steel Band 2.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

157. *Chamber Music: Steel Band 3.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

158. *Chamber Music: Ethnic.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

159. *Chamber Music: Percussion Other.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

160. *Introduction to Music Composition.* 2 Hr. PR: Consent. (Open to music composition majors only.) Development of creativity in musical composition. May be repeated for credit. (2 hr. lec.)

161. *Aural Theory 1.* I. 2 Hr. The four aural theory courses (MUSC 161, 163, 261, and 263) form a unit of instruction devoted to the development of aural skills such as sight-singing, melodic and harmonic dictation, identification of chords, chord progressions, modulations, and non-harmonic tones.

162. *Written Theory 1.* I. 2 Hr. Elementary theory (scales, keys, intervals, triads, and dominant seventh chords) and introduction to diatonic harmony (part-writing and analysis.)

163. *Aural Theory 2.* II. 2 Hr. PR: MUSC 161. Continuation of MUSC 161.

164. *Written Theory 2.* II. 2 Hr. PR: MUSC 162. Continuation of MUSC 162. Diatonic harmony including part-writing, harmonization of melodies, and harmonic analysis with triads, seventh chords, secondary dominants, and modulation. Analysis of binary and ternary forms.

165. *Fundamentals of Music.* I, II. 3 Hr. (Not open to music majors.) Introductory course designed to develop music reading skills through a systematic presentation of music notation and elementary compositional projects.

168. *20th Century American Pop Music.* 3 Hr. Introduction to history and development of American popular music.

169. *Diction for Singers: French.* I, II. 2 Hr. (May be repeated for credit; max 8 r.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in various languages. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

169 A. *Diction for Singers: English.* I, II. 2 Hr. (May be repeated for credit; max 8 hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in various languages. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

169 B. *Diction for Singers: Italian.* I, II. 2 Hr. (May be repeated for credit; max 8 hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in various languages. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

169 C. *Diction for Singers: German.* I, II. 2 Hr. (May be repeated for credit; max 8 hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in various languages. Other aspects of language that will aid comprehension of song, oratorio, and operatic texts considered.

169 D. *Diction for Singers.* I, II. 2 Hr. (May be repeated for credit; max 8 hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English; Italian, Latin, Spanish, German, and French. Other aspects of language that will aid comprehension of song, oratorio, and operatic texts considered.

170. *Introduction to Music.* I, II. 3 Hr. (Not open to music majors.) Introductory course designed to develop an appreciation and understanding of the significance of music as a fine art, and to help the student develop intelligent listening habits.

171. *Music in Appalachia.* I. (Alternate years.) 3 Hr. (Not open to music majors.) Survey of traditional instrumental and vocal music of southern Appalachia. History, style characteristics, and performance techniques involving live and recorded examples emphasizing those found in West Virginia.

172. *Music in Western Culture.* I. 3 Hr. PR: MUSC 170 or consent. (Not open to music majors.) A survey of western music from early Christian times to the twentieth century with special emphasis upon cultural and social relationships.

173. *Music of the Modern Age.* II. 3 Hr. PR: MUSC 170 or consent. (Not open to music majors.) A survey of western music of the twentieth century from Debussy to recent years, emphasizing stylistic, historical, and cultural facets.

174. *Great Composers.* I. 3 Hr. PR: MUSC 170 or consent. (Not open to music majors.) A study of major works by a chosen composer or group of composers.

175. *Introduction to History of Jazz.* II. 3 Hr. PR: MUSC 170 or consent. An introduction to jazz, its characteristics, important performers, and their music, including an historical survey with attention to the changing style of the music.

176. *Folk Music of the United States.* I. 3 Hr. Introduction to the folk music of various American cultural groups in historical context. Comparative analysis of representative tunes and texts.

177. *Introduction to Music Listening.* II. 1 Hr. (For music majors only.) Guided listening to representative compositions of various traditions of Western Music. Development of ability to describe elements of compositions and style using a standard musical vocabulary.

180. *Introduction to Music Education.* II. 1 Hr. Introduction to purposes of school music education, students as learners, content and structure of school music programs, and music teacher knowledge and skills.

181. *Fundamental Music Skills.* I, II. 2 Hr. (Not open to music majors.) Development of skills for future classroom teachers. Basic understanding of rhythm, dynamics, tone color, pitch, and form.

182. *Teaching Elementary School Music.* I, II. 2 Hr. PR: MUSC 181 or consent. (Not open to music majors.) Leading and teaching of songs. Guiding children in conceptual development in music through activities approach.

183. *Chamber Music: Jazz Big Band 1.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

183 A. *Chamber Music: Jazz Big Band 2.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

183 B. *Chamber Music: Jazz Small Group 1.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

183 C. *Chamber Music: Jazz Small Group 2.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

183 D. *Chamber Music: Jazz Small Group 3.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

183 E. *Chamber Music: Jazz and Ethnic.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

183 F. *Chamber Music: Jazz Experimental.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

183 G. *Chamber Music: Jazz Vocal Ensemble.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

183 H. *Chamber Music: Jazz Other.* I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

189. *Music Convocation.* 0 Hr. (Required for all music majors for six semesters. May be repeated.) Faculty, guest artist, and student performances, lectures and forums on major musical issues and topics.

200. *Fundamentals of Conducting.* I. 2 Hr. PR: MUSC 163 and 164. Basic conducting skills, including beat patterns, expressive gestures, cues, and the fermata; terminology; tempo changes; and the mechanics of score reading.

201. *Conducting and Score Interpretation.* I, II. 2 Hr. PR: MUSC 200 or consent. Development of techniques of score study; rehearsal preparation. Rehearsals of laboratory ensemble. Study of string, wind, and choral scores.

202. *Conducting and Rehearsing.* I, II. 2 Hr. PR: MUSC 201 or consent. Intensive study of wind, choral, and orchestral scores, rehearsed by the laboratory ensemble. Conducting of a major performance ensemble in rehearsal.

261. *Aural Theory 3.* I. 2 Hr. PR: MUSC 163. Continuation of MUSC 163.

262. *Written Theory 3.* I. 2 Hr. PR: MUSC 164. Continuation of MUSC 164. Diatonic and chromatic harmony including part-writing, harmonization of melodies, and harmonic analysis with seventh chords. Modulations, and foreign chords. Introduction to counterpoint.

263. *Aural Theory 4.* II. 2 Hr. PR: MUSC 261. Continuation of MUSC 261.

264. *Written Theory 4.* II. 2 Hr. PR: MUSC 262. Consideration of melody, rhythm, harmony, texture, form, etc., and how they function to produce an organic work of art. Analysis of larger musical forms and emphasis on twentieth century techniques.

265. *Instrumentation.* I. 2 Hr. PR: MUSC 164. Study of characteristics of band and orchestral instruments and their use in scoring.

266. *Orchestration and Band Arranging.* II. 2 Hr. PR: MUSC 265. Problems in scoring for orchestra and band.

267. *Choral Arranging.* 2 Hr.

270. *History of Western Musical Traditions 1.* I. 3 Hr. PR: MUSC 177 or MUSC 170. Survey of Western musical traditions from the Christian era to c1800 in their stylistic, historic, and social settings.

271. *History of Western Musical Traditions 2.* 3 Hr. PR: MUSC 270 and ENGL 102. Survey of Western musical traditions from c1800 to the present in their stylistic, historic, and social settings.

280. *Woodwind Instrument Pedagogy.* I, II. 2 Hr. Techniques of teaching woodwind instruments, including playing techniques, pedagogical techniques appropriate for young players, methods, materials, maintenance, and repairs.

281. *Brass Instrument Pedagogy.* I, II. 2 Hr. Techniques of teaching brass instruments, including playing techniques, pedagogical techniques appropriate for young players, methods, materials, maintenance, and repair.

282. *String Instrument Pedagogy.* I, II. 2 Hr. Techniques of teaching string instruments, including playing techniques, pedagogical techniques appropriate for young players, methods, materials, maintenance, and repair.

283. *Percussion Instrument Pedagogy.* I, II. 2 Hr. Techniques of teaching percussion instruments, including playing techniques, pedagogical techniques appropriate for young players, methods, materials, maintenance, and repair.

284. *Vocal Pedagogy.* I, II. 2 Hr. PR: MUSC 138 or MUSC 138 exemption. Techniques of voice culture; applicable to school choral activities and instruction of young singers

285. *Introduction to Jazz Improvisation.* I. 2 Hr. PR: MUSC 163 and MUSC 164 and Proficiency Level 4. Development of improvisatory skills in the jazz idiom using melodic, harmonic, and rhythmic motives and patterns, and the application of knowledge of tonal centers, chord progressions, and junctions.

286. *Advanced Jazz Improvisation.* II. 2 Hr. PR: MUSC 285 or Consent. Continuation of MUSC 285. Analysis of chord progressions with emphasis on chord substitutions, turnbacks, and scales. Development of jazz repertoire through performance.

293 A-Z. *Special Topics.* I, II, S. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

360. *Composition.* I, II. 2 Hr. PR: MUSC 264 or consent. (May be repeated for credit; max. 8 hr.) Creative writing.

380. *Instrumental Methods and Materials.* 3 Hr. PR: For music education majors, successful completion of all pre-professional requirements. Methods, materials, and administration of K-12 instrumental music programs. Bi-weekly laboratory.

381. *Choral Music Methods and Materials.* 3 Hr. PR: For music education majors, successful completion of all pre-professional requirements. Methods, materials, and administration of K-12 choral music program. Bi-weekly laboratory.

382. *General Music Methods and Materials.* 3 Hr. PR: For music education majors, successful completion of all pre-professional requirements. Methods, materials, and curriculum for elementary general music programs. Weekly practicum (arranged).

383. *Marching Band Techniques.* 2 Hr.

384. *Music Arranging for Public School Groups.* I, II. 2 Hr. PR: MUSC 262. Practical experience in techniques of making simple, workable arrangements of music for public school choral and instrumental performance groups.

430. *Piano Class Methods and Materials.* I. 3 Hr. Methods, materials, and pedagogical techniques, including presentation of keyboard theory as used in functional piano. Practical organization of piano classes. Laboratory: Observation of experienced class teacher and student teaching.

431. *History of Keyboard Pedagogy and Technique.* II. 3 Hr. Study of keyboard development and technique, including pedagogical works of the eighteenth through twentieth centuries and application to specific teaching problems. Laboratory: Student teaching and observation, emphasizing analysis and solution of technical problems.

432. *Methods and Pedagogy.* I. 0-2 Hr. PR: Junior standing or consent.

433. *Methods and Pedagogy.* II. 1-2 Hr. PR: MUSC 432 or consent.

434. *Repertoire.* I. 0-2 Hr.

435. *Repertoire: Voice.* II. 0-2 Hr.

435 A. *Repertoire: Piano.* II. 0-2 Hr.

435 B. *Repertoire: Other.* II. 0-2 Hr.

460. *Upper-Division Composition.* I, II. 2 Hr. (May be repeated for credit.) PR: Two semesters MUSC 360, or consent based on scores submitted. Creative writing with emphasis on practical composition for performance.

461. *Counterpoint.* I. 2 Hr. PR: MUSC 264 or consent. Sixteenth century counterpoint.

462. *Counterpoint.* II. 2 Hr. PR: MUSC 264 or consent. Eighteenth century counterpoint.

463. *Analysis of 18th-19th Century Music.* II. 3 Hr. PR: MUSC 264 or consent. Detailed study of the materials and structure of European music of the eighteenth and nineteenth centuries. (Alternate years.)

464. *Analysis of 20th-Century Art Music.* II. 3 Hr. PR: MUSC 264 or consent. Detailed study of the materials and structure of Western Art Music of the twentieth century. (Alternate years.)

465. *Electronic Music.* 2 Hr. PR: MUSC 264 or consent. Technology of producing electronic music. Methods of producing electronic compositions, relationship between sound signal and sound perceived, ear training, analysis of examples from electronic music literature, and composition of electronic music.

466. *Electronic Music.* II. 2 Hr. PR: MUSC 465. Continuation of MUSC 465.

467. *Major Project in Theory, Composition, or Music History.* I, II. 2 Hr. (Not available for graduate credit.) PR: MUSC 264.

468. *Jazz Harmony.* II. 2 Hr. PR: MUSC 264 and MUSC 286 or consent. Advanced jazz theory and harmony. Ear training, keyboard skills, chord voicing, and substitutions.

470. *European Music before 1500.* 3 Hr. PR: MUSC 271 or consent. A study of European sacred and secular monophonic and polyphonic traditions in their stylistic, historic, and social settings to the end of the fifteenth century.

471. *Music of the Sixteenth and Seventeenth Centuries.* 3 Hr. PR: MUSC 271 or consent. A study of European sacred and secular, instrumental, and vocal traditions in their stylistic and social settings from c1500 to c1700.

472. *Music of the Eighteenth Century.* 3 Hr. PR: MUSC 271 or consent. A study of Western instrumental and vocal traditions in their stylistic, historic, and social settings from c1700 to c1800.

473. *Music of the Nineteenth Century.* 3 Hr. PR: MUSC 271 or Consent. A study of Western instrumental and vocal traditions in their stylistic, historic, and social settings from c1800 to c1900.

474. *Music of the Twentieth Century.* 3 Hr. PR: MUSC 271 or Consent. A study of Western instrumental and vocal traditions in their stylistic, historic, and social settings from c1900 to the present.

475. *History of Jazz.* 3 Hr. PR: MUSC 271 or Consent. History and repertory of jazz from its Afro-American origins to 1975 with attention to its major exponents (including Joplin, Armstrong, B. Smith, Morton, Ellington, Gillespie, Parker, Davis, and Coltrane) and its evolving style.

476. *Women in Music.* I. 3 Hr. PR: MUSC 271 or consent. Critical examination of female musicians and their range of musical styles including composers, repertoire, performers, etc., from Medieval period through today; feminist methodology includes re-examination of history and gender theory. (Travel expense possible; see current syllabus.) (Alternate years.)

477. *Music of Africa.* 3 Hr. Traditional music of selected areas of Africa south of the Sahara with particular reference to East Africa. The diverse musical cultures with emphasis on historical background, instruments, ensembles, forms, styles, and music in its social context.

480. *Arranging for Small Jazz Ensemble.* 2 Hr. PR: MUSC 265. Emphasis on small ensembles comprising three to nine players.

481. *Arranging for Large Jazz Ensemble.* 2 Hr. PR: MUSC 480 or consent. Continuation of MUSC 480, with emphasis on arranging for big band and studio jazz ensemble.

488. *Recital.* I, II. 0-2 Hr. (Not available for graduate credit.) To be used to fulfill the applied major graduation requirement only when the student has achieved Proficiency Level 9. Students who have reached Level 6 may receive 1 hour of credit, which may not be used to fulfill the graduation recital requirement.

489 A-Z. *Music Workshops.* I, II, S. 1-2 Hr. (May be repeated for credit.)

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491 A-Z. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492. *Directed Study.* I, II, S. 1-3 Hr. Directed study, reading, and/or research.

492 A. *Directed Study: Pedagogy Project.* I, II, S. 1-3 Hr. Directed study, reading, and/or research.

492 B. *Directed Study: African Music/Dance.* I, II, S. 1-3 Hr. Directed study, reading, and/or research.

492 C. *Directed Study: Choral Techniques.* I, II, S. 1-3 Hr. Directed study, reading, and/or research.

492 D. *Directed Study: Conducting.* I, II, S. 1-3 Hr. Directed study, reading and/or research.

492 E. *Directed Study: Theory Review.* I, II, S. 1-3 Hr. Directed study, reading, and/or research.

492 F. *Directed Study: Music Education Practicum.* I, II, S. 1-3 Hr. Directed study, reading, and/or research.

492 G. *Directed Study: Rhythms of Africa.* I, II, S. 1-3 Hr. Directed study, reading, and/or research.

492 H. *Directed Study: Bali.* I, II, S. 1-3 Hr. Directed study, reading, and/or research.

492 I. *Directed Study: Music/Dance/Art-Tahiti.* I, II, S. 1- 3 Hr. Directed study, reading, and/or research.

492 J. *Directed Study: Chamber Music in France.* I, II, S. 1-3 Hr. Directed study, reading, and/or research.

492 K. *Directed Study: Graduate Theory Review.* I, II, S. 1-3 Hr. Directed study, reading, and/or research.

492 L. *Directed Study: Music Education.* I, II, S. 1-3 Hr. Directed study, reading, and/or research.

492 M. *Directed Study: Introduction to World Music.* I, II, S. 1-3 Hr. Directed study, reading, and/or research.

492 N. *Directed Study: Recording Technology.* I, II, S. 1-3 Hr. Directed study, reading, and/or research.

492 O. *Directed Study.* I, II, S. 1-3 Hr. Directed study, reading, and/or research.

493. *Special Topics.* I, II, S. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

News-Editorial (N-E)

408. *The Community Newspaper.* 2 Hr. (Open to all University students.) Fundamental problems and techniques in operation of community newspapers.

418. *Advanced Reporting.* 3 Hr. PR: JRL 319 and admission to the School of Journalism or consent. Students write carefully researched stories using writing, reporting, and interviewing skills they have acquired in previous classes while applying techniques of literary journalism. The class emphasizes immersion reporting; students spend extended time with one subject to develop skills in storytelling, interviewing, and organization. (Lab fees will be assessed for this course.)

420. *Feature Writing.* 3 Hr. PR: JRL 318 and admission to the School of Journalism or consent. Developing, writing, and editing news features, personality profiles, color pieces, issue-oriented articles, and human impact stories for news, public relations, and film. The course emphasizes narrative, descriptive, analytical, and story-telling skills. One-on-one professor/student conferences stress story-building and revision. (Lab fees will be assessed for this course.)

425. *High School Publications Advising.* 3 Hr. PR: JRL 319 and ADV 215. (For students seeking journalism education certification.) Emphasizes writing styles, newspaper/yearbook layout, rights and responsibilities of the teacher, students, and school system. Enrollees will construct instructional portfolios based on research and classroom discussion concepts.

426. *Public Affairs Reporting.* 3 Hr. PR: JRL 319 or PR 319 and admission to the School of Journalism. Students take skills learned in other news editorial classes—writing, researching, and interviewing—and apply them to the agencies, structures, and programs that make society work. They also work with local newspapers to develop and publish stories. Public agencies, including circuit court, and police. (Lab fees will be assessed for this course.)

427. *American Journalism History.* 3 Hr. PR: JRL 101 HIST 152, and HIST 153 or consent. Development of media from seventeenth-century England and the American colonies; great names in journalism; freedom of the press and its implications and impact on the nation.

428. *Law of the News Media.* 3 Hr. (For journalism seniors and graduate students.) PR: Foundation courses for other major programs. The law as it affects the mass media. Considered are such areas as libel, privacy, public records, criminal pre-trial publicity, freedom of information, obscenity.

430. *Editorial and Critical Writing.* 3 Hr. PR: JRL 319 or PR 319. Students will analyze news issues, write editorials, and write editorial page columns. Students will also analyze the role and content of the editorial pages in contemporary newspapers.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant. (Grading will be Pass/Fail.)

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development. (Grading will be Pass/Fail.)

493. *Special Topics.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Nursing (NSG)

110. *Health and the Caring Professions.* 3 Hr. Health promotion and risk reduction; data collection; cultural diversity; values that contribute to health; interpersonal communication in promoting professional relationships.

221. *Human Responses 1.* 3 Hr. PR: NSG 110 and COREQ: NSG 225, Sophomore standing or Consent. Human responses that promote health throughout the life span; individual health assessment.

223. *Seminar 1: Professional Role Development.* 1 Hr. PR: NSG 110, Sophomore standing or consent. Characteristics of self in role transition; values and beliefs; personal and professional behaviors in nursing care.

225. *Nursing Interventions 1.* 3 Hr. COREQ: NSG 221; PR: Sophomore standing or consent. Critical thinking in application of the nursing process in individuals with altered mobility, comfort, or potential infection; health protection, promotion, and maintenance interventions.

241. *Human Responses 2.* 2 Hr. PR: NSG 221 and 225. COREQ: 245. Enhances student understanding of human responses to minor deviations in health throughout the life span; professional role in health restoration; family health assessment.

243. *Seminar 2: Professional Role Development.* 2 Hr. PR: NSG 223. Emphasis on developing caring behaviors through examination of issues related to moral/ethical integrity; values, culture, and family.

245. *Nursing Interventions 2.* 4 Hr. PR: NSG 221 and NSG 225. COREQ: NSG 241. Critical thinking in the application of the nursing process to individuals with minor deviations in health protection, health restoration, and health promotion/maintenance.

332. *Human Response to Multiple Psysiological System Dysfunction.* 5 Hr. PR: NSG 361 or consent. COREQ: NSG 335. The focus is on the human response to physiological system dysfunction. The emphasis is on the professional nursing role in complex psysiological health restoration.

333. *Seminar 3: Professional Role Development.* 2 Hr. PR: NSG 243 or consent. Managing individual/family/group systems. Focus on ethical decision making in health care situations.

335. Nursing Interventions 3. 5 Hr. PR: NSG 361 or consent. Advanced physiological assessment and independent nursing interventions that promote health restoration. Advanced collaborative nursing activities.

340. *Professional Role Transition.* 3 Hr. PR: RN Licensure. The course focuses on concepts and principles of professional nursing inherent in the curriculum of the School of Nursing. Emphasis is placed on how these concepts and principles affect nursing role.

343. *Seminar 7: Professional Role Development.* 2 Hr. PR: NSG 340. Seminar with emphasis on the role of the professional nurse within the multidisciplinary team. Focus is on decision making in life-span ethical dilemmas and on effective communication within the health care team.

351. *Psychosocial Dysfunction.* 2 Hr. PR: NSG 361 or consent; COREQ: NSG 355. Human response to multiple system dysfunction; professional nursing role in complex psychosocial health restoration.

353. *Seminar 4: Professional Role Development.* 2 Hr. PR: NSG 333 or consent. Communication skills within the multidisciplinary team; collaborative roles and team dynamics.

355. *Nursing Interventions 4.* 5 Hr. PR: NSG 361 or consent. COREQ: NSG 351. Advanced psychosocial assessment and independent nursing interventions to promote health restoration; advanced collaborative nursing activities.

356. *Alterations in Psychosocial Health.* 3 Hr. PR: PSYC 241. COREQ: NSG 351 and NSG 355. Normal psychosocial functions change as a result of altered health; integration of developmental changes and preventive aspects of health.

361. *Health Assessment.* 3 Hr. PR: NSG 225 or consent. Comprehensive, in-depth assessment of the client's health status, health patterns, physical examination, and health history. Interviewing techniques including taped interactions and accurate recording of data for clients across the life span.

369. *Writing in Nursing.* 1 Hr. PR or Conc: NSG 333, NSG 343 or NSG 353. Integration of the content learned in selected courses with writing about important topics; must be taken concurrently with an approved Professional Nursing Role Seminar.

421. *System Responses to Physiological Dysfunction.* 3 Hr. PR: Senior standing in NSG or consent. COREQ: NSG 425. Emphasis on professional nursing role in supporting individual/family/group responses to acute life threatening situations involving vulnerable populations; focus is on nursing role in providing care to unstable, individuals/families/groups.

423. *Seminar 5: Professional Role Development.* 2 Hr. PR: NSG 353 or consent. The professional's role in creating and managing the health care milieu; focus is on the nurse manager role and interventions in support of the client/family experiencing acute or long term health problems.

425. *Nursing Interventions 5.* 6 Hr. PR: Senior standing in nursing or consent. COREQ: NSG 421. Professional nursing role in supporting human responses to acute, life-threatening situations involving identified vulnerable populations; focus is on therapeutic nursing interventions specific to aid human responses of individuals with physiologic instability and their families.

433. *Seminar 8: Professional Role Synthesis.* 3 Hr. PR: NSG 343. Emphasis is on implementation of the professional nursing role within a changing health care system. Focuses on analysis of societal, institutional, and economic factors that affect the delivery of health care.

441. *Community Response to Health Promotion.* 3 Hr. PR: Senior standing in nursing or consent. COREQ: NSG 445. Community health nursing processes with emphasis on the professional nursing role in the assessment of community health needs and identification of health action potential.

443. *Seminar 6: Professional Role Development.* 2 Hr. Emphasis on professional nursing role in health promotion/ risk reduction in groups/communities of vulnerable populations. Focuses on multidisciplinary team approaches to problem solving in community health.

445. *Nursing Interventions 6.* 6 Hr. PR: Senior standing in nursing or consent. COREQ: NSG 441. Emphasis on the collaborative role of the nurse in assisting communities to develop and implement plans for health promotion/risk reduction across the life span. Focus is on vulnerable populations.

476. *Introduction to Nursing Research.* 3 Hr. PR: STAT 211 or consent. Theory, concepts, and methods of the research process intended to provide a basic understanding that is necessary for intelligent consumership of research findings.

481. *Cardiac Nursing.* 2 Hr. Web-based. Mastery format. NSG juniors and seniors. Introduction to the interpretation and treatment of cardiac arrhythmias.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

495. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

497. *Research.* 1-6 Hr. Independent research projects.

Occupational Therapy (OTH)

300. *Essentials of Clinical Anatomy.* 4 Hr. PR: OTH student status. A study of human gross anatomy, micro anatomy, and embryology with major emphasis on the musculosketal system.

301. *Professional Foundations.* 3 Hr. PR: OTH student status. Introduction to fundamentals of professional behavior for the occupational therapist. Includes units on history, paradigms, communication, documentation, ethics, interdisciplinary teamwork, licensure requirements, and medical terminology.

302. *Survey of Clinical Problem-Solving and Scientific Inquiry.* 2 Hr. PR: OTH student status. An introduction to analysis of clinical and research problems, including strategies for problem analysis and outcome.

303. *Functional Movement Across the Lifespan.* 2 Hr. PR: OTH student status. Including acquisition of developmental patterns, motor control, motor skill acquisition. This course also provides an overview of the effects of normative processes of aging on neuromotor patterns in occupational performance.

304. *Occupational Science.* 4 Hr. PR: OTH student status. An introduction to signs and symptoms and medical management of orthopedic and physical dysfunction/disabilities encountered by the occupational therapist. Emphasis is upon the effects of physical dysfunction/disabilities on human occupation.

306. *Kinesiologic Foundations.* 4 Hr. PR: OTH student status. Functional anatomical correlations and human movement. Statics, biomechanics, dynamics, and functional movement analysis.

307. *Neurobiologic Foundations.* 4 Hr. PR: OTH student status. Basic and clinical applications or neuroanatomy and neurology. Includes lectures on neurophysiological basis of physical and occupational therapy practice.

308. *Evaluation Procedures.* 3 Hr. PR: OTH student status. Theory and practice in evaluation procedures used by therapists. Includes Manual Muscle Test, isoknetic muscle testing, and assessment of components of movement, posture, balance, and hand function.

321. *Development Life Tasks.* 3 Hr. PR: OTH student status. Life-span human development across cognitive, psychosocial, and neuromotor domains with particular emphasis on applications to physical or occupational therapy interventions. Includes focus on cultural influences in health and illness.

360. *Research Methods in Occupational Therapy.* 3 Hr. PR: OTH student status. An introduction to principles of research methodology and data analysis in the realm of occupational science/occupational therapy. Includes a focus on scientific methodology, research design, data collection, data analysis, and ethical considerations.

384. *Level I Fieldwork 1.* 2 Hr. CPR training and clinical instruction in the occupational therapy process, OT documentation, basic measurement skills, experiences with people with disabilities, and participation in professional activities. (Grading will be Pass/Fail.)

385. *Level I Fieldwork 2.* 2 Hr. PR: OTH student status. Students will be provided with fieldwork experience in the occupational therapy process, and ADL perceptual, and mental health assessments. Students will be placed in a variety of settings where mental health issues may be observed. (Grading will be Pass/Fail.)

386. *Level I Fieldwork 3.* 2 Hr. PR: OTH student status. Students will be provided with fieldwork experiences in occupational therapy processes. (Grading will be Pass/Fail.)

401. *Occupational Science 2.* 4 Hr. PR: OTH student status. An introduction to signs and symptoms and management and effect of neurological dysfunction and disabilities on human occupation encountered by the occupational therapist. Includes theories of treatment and basic treatment technologies.

402. *Clinical Decision Making 1.* 2 Hr. PR: OTH student status. Continuation of preparation for critical thinking and decision making in the field using appropriate information and technology in a case study format. An emphasis on autonomous practice and referral decisions.

406. *Cardio-Pulmonary Rehabilitation.* 3 Hr. PR: OTH student status. Lectures on cardiovascular and pulmonary conditions including medical interventions. Discipline-specific laboratory sessions include stress testing, physical capacity assessment, ecological analysis, use of monitoring equipment, and evaluation and planning rehabilitation protocols.

408. *Tests and Measures in Occupational Therapy.* I. 3 Hr. PR: OTH student status. Presentation of tests and measures used by occupational therapists in the assessment of various conditions. Emphasis will be placed on the clinical and functional evaluation of clients within the domain of occupational therapy practice.

416. *Professional Decision-Making.* 2 Hr. PR: OTH student status. Students are provided with opportunities to develop critical thinking, clinical reasoning, and decision-making skills in occupational therapy. Emphasis is on autonomous practice and referral decisions.

417. *Occupational Therapy in Geriatrics.* 3 Hr. PR: OTH student status. Overview of normative aging using an occupational therapy frame of reference. Common problems of seniors are discussed.

419. *Professional Values.* 3 Hr. PR: OTH student status. An introduction to ethics and how it specifically applies to rural health and life in West Virginia. Students will be given an opportunity to explore their own conceptions of ethics in health care.

430. *Occupational Therapy in Mental Health.* 3 Hr. PR: OTH student status. Clinical and functional science lectures pertaining to OT practice in mental health environments. Course includes introduction to occupational therapy clinical and functional assessment, and management protocols.

432. *Occupational Therapy Interventions in Mental Health II.* 4 Hr. PR: OTH student status. Interventions commonly used by occupational therapists in the field of mental health. Emphasis on group processes, life skills, reintegration strategies.

435. *Therapeutic Activity.* 3 Hr. PR: OTH student status. Students will develop skills in performance component analysis, performance context analysis, and occupational performance analysis.

480. *Current Topics in Occupational Therapy.* 1-3 Hr. PR: OTH student status. (Not to exceed 18 hr.) A seminar course designed to provide a forum for discussing the frontiers of the occupational therapy profession. Topics may include: research in progress, new developments, and salient professional issues.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

497. *Research.* I, II, S. 1-6 Hr. Independent research projects.

Orientation (ORIN)

151. *Career Series-Career Planning Exploration.* I, II. 1 Hr. Exploration of careers with special emphasis on individual interests, abilities, and values. Most beneficial to freshmen and sophomores, but appropriate for juniors and seniors. (Pass/Fail grading only.)

161. *Exploring Career Options.* 1 Hr. This course helps students explore the career that is best for them. Students receive individual counseling as well as an opportunity to talk with career mentors.

162. *Becoming Career Ready.* 1 Hr. This course helps students identify the personal and professional skill requirements of their selected career. The course involves a mix of group explorations, one-on-one discussions, and self-improvement exercises.

163. *Gaining Experience.* 1 Hr. This course helps students find experience to support their career choice. The course also helps students assess what they learn from the experience and evaluate whether their career selection meets their needs.

164. *Finding the First Job.* 1 Hr. This class helps students develop and execute a strategy for obtaining a first job that is consistenet with the student's carreer interests.

165. *Starting Your Career.* 1 Hr. This class helps students prepare for the issues they will encounter early in their careers.

220. *Leadership Development.* I. 2 Hr. PR:S ophomore standing. Primarily for sophomores and juniors. A practical survey of leadership techniques taught by various instructors. Major emphasis placed upon improvement of leadership abilities within the WVU campus structure and problems particular to student organizations. (Pass/Fail grading only.)

252. *Career Series-Job Search.* I, II. 1 Hr. PR: ORIN 151 recommended. Methods of looking for a job employer expectations, interviewing, resumes, letter writing etc. Should be taken next to last semester, but can be taken at other times. (Pass/Fail grading only.)

270. *Introduction to Health Careers.* II. 1 Hr. A study of careers in the health professions. Readings, lectures, and discussions by professionals in many health fields will include the educational requirements for and functions of their respective health professions. (Pass/Fail grading only.)

272. *Orientation to Law.* I, II. 1 Hr. An orientation to the legal profession for undergraduates. Undergraduate preparation for law school; (Law School Admissions Test LSAT); admission to law school, law school experience, and the legal profession. (Pass/Fail grading only.)

293 A-Z. *Special Topics.* I, II, S. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maxium of 18 hours). Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Pathology (PATH)

301. *Basic Pathology.* I. 2 Hr. PR: Enrollment in dental hygiene or physical therapy, or Consent. A study of the basic pathologic processes in man.

302. *Oral Pathology.* II. 3 Hr. PR: PATH 301, dental hygiene major, or Consent. Application of fundamental knowledge of general pathology to pathological conditions that occur in the oral cavity.

Petroleum and Natural Gas Engineering (PNGE)

200. *Introduction to Petroleum Engineering.* 3 Hr. PR: Sophomore standing. Introduction; origin, migration, and accumulation of petroleum; reservoir fluids properties; properties of reservoir rocks; exploration; drilling technology; reservoir engineering; well completions; production engineering. Open to all students.

293 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

297. *Research.* I, II. S. 1-6 Hr. Independent research projects.

300. *Transport Phenomena in Petroleum Engineering.* 3 Hr. PR: MAE 241. Introduction to fluid flow in pipes, two-phase flow, rotary drilling hydraulics, primary cementing jobs, flow calculations, flow measuring devices, fluid machinery, dimensional analysis, and heat transfer.

310. *Drilling Engineering.* 4 Hr. PR: GEOL 101 and MAE 331. Rock properties, functions, and design considerations of rotating system, hoisting system, and circulation system; drilling fluids calculations and selections; hydraulic programs; drilling optimization; casing string design; cementing programs; and pressure control.

312. *Drilling Fluids Laboratory.* 1 Hr. PR or Conc: PNGE 310. Topics include clay hydration, viscosity of water-based fluids, mud weight control, filtration studies, thinning agents, chemical contaminants, lime muds, polymer muds, reheological models, and liquid and solid determination.

332. *Petroleum Properties and Phase Behavior.* 3 Hr. PR: Junior standing. Theoretical and applied phase behavior of hydrocarbon systems and hydrocarbon fluid properties. Applications to petroleum reservoir and production engineering design. (2 hr. lec., 3 hr. lab.)

333. *Elements of Petroleum Reservoir Engineering.* II. 3 Hr. PR: MAE 331. Basic properties of petroleum reservoir rocks. Fluid flow through materials. Evaluation of oil and gas reserves.

391 A. *Advanced Topics.* 1-6 Hr.

400. *Petroleum Engineering Ethics.* 1 Hr. PR: Senior standing. Introduction to petroleum and natural engineering ethics and moral issues concerning safety in engineering practice as well as those arising for engineers employed by corporations. Professionalism and professional registration.

420. *Production Engineering.* 3 Hr. PR: PNGE 310. Well completion, performance of productive formulation, drill stem tests, completion of wells, flowing wells, gas lift methods and equipment, pumping installation design, well stimulation, emulsion, treating, gathering and storage of oil and gas, field automation. (3 hr. lec.)

432. *Petroleum Reservoir Engineering Laboratory.* 1 Hr. PR or Conc: PNGE 333. Laboratory evaluation of basic and special petroleum reservoir rock properties. (3 hr. lab.)

434. *Applied Petroleum Reservoir Engineering.* 3 Hr. PR: PNGE 333 and PR or Conc: STAT 215 or IMSE 213. Application of reservoir engineering data to calculation of recovery potentials and to analysis, simulation and prediction of reservoir performance under a variety of production methods to effect maximum conservation.

441. *Oil and Gas Property Evaluation.* 3 Hr. PR: PNGE 333 and PR or Conc: PNGE 420 or Consent. Reserve estimation, decline analysis, petroleum property evaluation, evaluation including interest calculations, cost estimation, and tax evaluation. Overview investment decision analysis and computer applications in property evaluation.

450. *Formation Evaluation.* 3 Hr. PR: PNGE 310 and PR or Conc: EE 306 or Consent. Various well logging methods and related calculations with exercises in interpretation of data from actual well logs. (3 hr. lec.)

460. *Well Stimulation Design.* 3 Hr. PR: (MAE 243 and PNGE 420 and PNGE 333) or Consent. Fundamentals of well stimulation and treatment design and their applications to low permeability formations.

470. *Natural Gas Engineering.* 4 Hr. PR: PNGE 333 and PR or Conc: MAE 320. Natural gas properties, compression, transmission, processing, and application of reservoir engineering principles to predict the performance and design of gas, gas-condensate, and storage reservoirs. Includes a laboratory devoted to gas measurements. (3 hr. lec., 3 hr. lab.)

471. *Natural Gas Production and Storage.* 3 Hr. PR: PNGE 470. Development of gas and gas-condendsate reservoirs; design and development of gas storage fields in depleted gas, gas-condensate, oil reservoirs, and aquifers.

480. *Petroleum Engineering Design.* 3 Hr. PR: (PNGE 420 and PNGE 434 and PNGE 441) and PR or Conc: PNGE 450. Comprehensive problems in design involving systems in oil and gas production, field processing, transportation, and storage.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Pharmacology (PCOL)

449. *Drugs and Medicines.* I. 3 Hr. (Not intended for pharmacy students.) PR: General biology or consent. A course intended to introduce a variety of university students to information about drugs and pharmaceutical preparations to include their source, administration, action, use, and abuse.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Pharmacy (PHAR)

449. *Drugs and Medicines.* I. 3 Hr. (Not intended for pharmacy students.) PR: General biology or consent. A course intended to introduce a variety of university students to information about drugs and pharmaceutical preparations to include their source, administration, action, use, and abuse.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Philosophy (PHIL)

100. *Problems of Philosophy.* 3 Hr. An elementary examination of such philosophical problems as the mind-body problem, the existence of God, freedom and determinism, and the nature of persons and their knowledge.

120. *Introduction to Ethics.* 3 Hr. Topics include the nature of the good life, whether ethics is relative or there are universal moral truths, the relationship between self-interest and morality, virtues and vices, and the nature of right and wrong.

130. *Current Moral Problems.* 3 Hr. An examination of current moral problems. Topics include some of the following: abortion, euthanasia, sexism and sexual equality, preferential treatment, animal rights, sexual morality, pornography, economic justice, paternalism, punishment, and nuclear deterrence.

170. *Introduction to Critical Reasoning.* 3 Hr. An elementary study of critical thinking and reasoning. For students who want to improve their skills in recognizing fallacious patterns of reasoning, constructing acceptable arguments, and criticizing faulty lines of reasoning.

244. *History of Ancient Philosophy.* I. 3 Hr. PR: 3 Hr. in philosophy. An introduction to the philosophies of the pre-Socratics, Plato, Aristotle, the Epicureans, and the Stoics.

248. *History of Modern Philosophy.* II. 3 Hr. PR: 3 Hr. in philosophy. A study of selected writings by major philosophers of the Western world from Descartes to Kant.

260. *Introduction to Symbolic Logic.* I, II. 3 Hr. An introduction to modern symbolic logic (basically, propositional logic and the predicate calculus) for students who want to acquire the skill to represent symbolically the form of deductive arguments and to test formally for validity.

261. *Symbolic Logic 2.* 3 Hr. PR: PHIL 260. Continuation of PHIL 260, covering relational logic and identity. Additional topics may include alternative methods and systems of logic such as proof trees, axiom systems, alternative operators, modal and many-valued logics, and set theory. (Equiv. to MATH 180.) (Not offered every year.)

293 A-Z. *Special Topics.* 3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

301. *Metaphysics.* I. 3 Hr. PR: 3 Hr. philosophy. Traditional problems associated with reality and experience, universals and particulars, causality, space and time, matter and mind, and the nature of the self.

302. *Theory of Knowledge.* II. 3 Hr. PR: 3 Hr. philosophy. The nature and scope of human knowledge. Topics may include perception, belief, truth, evidence, certainty, and skepticism.

304. *Feminist Philosophy.* 3 Hr. PR: 3 Hr. philosophy. An examination of fundamental metaphysical, methodological, ethical, and legal issues in feminist philosophy.

306. *Philosophy of Mind.* 3 Hr. PR: 3 Hr. philosophy or psychology major. Topics to be selected from: the mind-body problem, psychological explanation, psychology and the neurosciences, personal identity, consciousness, artificial intelligence, mental representation, emotions, intentionality, folk psychology, and other minds.

308. *Philosophy of Religion.* 3 Hr. PR: 3 Hr. philosophy or religious studies interdepartmental major. Examines questions of belief in God's existence, life after death, the problem of evil, determinism and divine foreknowledge, or other topics bearing upon the nature of a religious orientation to life.

310. *Philosophy of Science.* 3 Hr. PR: 3 Hr. philosophy or science major. Philosophical problems associated with the concepts and methodology of science.

321. *Ethical Theory.* II. 3 Hr. PR: 3 Hr. philosophy. Topics to be selected from the following: an examination of major ethical theories, justification in ethics, moral truth, ethical skepticism, moral rights and duties, and the meaning of ethical concepts.

323. *Social and Political Philosophy.* I. 3 Hr. PR: 3 Hr. philosophy or political science major. An examination of the relationships among the individual, society, and the state. Possible topics include justifications of the state, justice, rights, liberty, equality, and arguments for socialism and capitalism.

325. *Philosophy of Law.* II. 3 Hr. PR: 3 Hr. philosophy or pre-law student. An introduction to the philosophical study of law; topics to be selected from: theories of the nature of law, legal obligation, responsibility, punishment, free speech, paternalism, legal moralism, and legal ethics.

331. *Health Care Ethics.* 3 Hr. PR: 3 Hr. philosophy; or pre-med or health sciences student. Topics: clinician-patient relationship, life-sustaining treatment, physician-assisted death, physician-nurse conflicts, confidentiality, research, reproductive technology, abortion, maternal/fetal conflicts, genetics, rationing, and access.

346. *History of Ethics.* I. 3 Hr. PR: 3 Hr. philosophy. An examination of such issues as the nature of the good life, the just society, and our moral responsibilities. Such major philosophers as Plato, Aristotle, Aquinas, Kant, and Mill will be studied.

351. *Topics in Medieval Philosophy.* 3 Hr. PR: 3 Hr. philosophy. Introduction to the philosophies of St. Augustine, St. Thomas Aquinas, Peter Abelard, William of Occam, and other selected figures from the Medieval period.

354. *Themes in Continental Philosophy.* 3 Hr. PR: PHIL 140 and PHIL 244. Nineteenth and twentieth century French and German philosophers such as Hegel, Marx, Nietzsche, Heidegger, Habermas, Sartre, Foucault, Derrida, philosophers and themes will vary.

355. *Existentialism.* 3 Hr. PR: 3 Hr. philosophy or literature course in existentialism. Survey of the major existentialist thinkers.

424. *Philosophy and Culture Criticism.* I. 3 Hr. PR: 3 Hr. of philosophy at 100 level or above. Recent philosophical analyses and critiques of modern Western culture: its relationship to discursive, social, economic, disciplinary, and gendering practices.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours). Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492. *Directed Studies.* 1-3 Hr. Directed study, reading, and/or research.

493. *Special Topics.* 3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. *Seminar.* II. 3 Hr. PR: 12 Hr in philosophy, 6 hr at the 300 level or above, and junior or senior standing or consent. Presentation and discussion of topics of mutual concern to students and faculty; advanced and in-depth philosophical investigation of selected problems and/or major philosophers. May be repeated with permission.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 3 Hr. PR: Senior standing or consent. Individualized project culminating in a major paper on a philosophical topic or author, written under the supervision of a faculty member with expertise in that topic or author.

497. *Research.* 1-6 Hr. PR: Consent. Independent research projects.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Physical Education (PE)

101. *Badminton.* 1 Hr. Introduction to beginning knowledge and skills in badminton.

102. *Badminton/Volleyball.* 1 Hr. Introduction to beginning knowledge and skills in badminton/volleyball.

104. *Intermediate Basketball.* 1 Hr. Introduction to intermediate knowledge and skills in basketball.

107. *Basketball Conditioning/Weight Training.* 1 Hr. Introduction to basic conditioning and weight training techniques for basketball.

108. *Football Conditioning/Weight Training.* 1 Hr. Introduction to basic conditioning and weight training techniques for football.

109. *Baseball Conditioning/Weight Training.* 1 Hr. Introduction to basic conditioning and weight training techniques for baseball.

110. *Military Physical Conditioning.* 1 Hr. Introduction to basic conditioning techniques for military training.

111. *Air Force Military Physical Conditioning.* 1 Hr. Introduction to basic conditioning techniques for military training.

112. *Gymnastics Conditioning/Weight Training.* 1 Hr. Introduction to basic conditioning and weight training techniques for gymnastics.

113. *Soccer Conditioning/Weight Training.* 1 Hr. Introduction to basic conditioning and weight training techniques for soccer.

114. *Tennis Conditioning/Weight Training.* 1 Hr. Introduction to basic conditioning and weight training techniques for tennis.

115. *Volleyball Conditioning/Weight Training.* 1 Hr. Introduction to basic conditioning and weight training techniques for volleyball.

116. *Wrestling Conditioning/Weight Training.* 1 Hr. Introduction to basic conditioning and weight training techniques for wrestling.

117. *International Wrestling.* 1 Hr. Introduction to beginning knowledge and skills in international wrestling.

118. *Swim Conditioning/Weight Training.* 1 Hr. Introduction to basic conditioning and weight training techniques for swimming.

120. *Canoeing.* 1 Hr. PR: Swimming skill. Types of canoeing strokes; life-saving techniques for recreational canoeing.

122. *Billards.* 1 Hr. Introduction to beginning knowledge and skills in billiards.

123. *Advanced Billiards.* 1 Hr. Introduction to advanced knowledge and skills in billiards.

125. *Aerobics.* 1 Hr. Introduction to beginning knowledge and skills in aerobics.

126. *Aqua Aerobics.* 1 Hr. Introduction to beginning knowledge and skills in aqua aerobics.

127. *Clogging.* 1 Hr. Introduction to beginning knowledge and skills in clogging.

130. *Flag Football.* 1 Hr. Introduction to beginning knowledge and skills in flag football.

131. *Frisbee.* 1 Hr. Introduction to beginning knowledge and skills in frisbee.

132. *Golf/Volleyball.* 1 Hr. Introduction to beginning knowledge and skills in golf and volleyball.

134. *Gymnastics.* 1 Hr. Introduction to beginning knowledge and skills in gymnastics.

135. *Horsemanship 1.* 1 Hr. Introduction to beginning knowledge and skills in horsemanship.

136. *Horsemanship 2.* 1 Hr. Introduction to intermediate and advanced knowledge in horsemanship.

137. *Ice Skating.* 1 Hr. Introduction to beginning knowledge and skills in ice skating.

138. *Snow Skiing.* 1 Hr. Introduction to beginning and intermediate knowledge and skills in snow skiing.

139. *Kinder Skills-Gym.* 2 Hr. Introduction to knowledge and skills used to prepare parents to help their children learn motor skills.

140. *Kinder Skills-Pool.* 2 Hr. Introduction to knowledge and skills used to prepare parents to help their children become familiar with water.

141. *Movement Education and Rhythms.* 1 Hr. Introduction to knowledge and skills used to prepare elementary education teachers to teach movement education and rhythmic activities.

142. *Elementary Physical Education.* 1 Hr. Introduction to knowledge and skills used to prepare elementary education teachers to teach elementary sport skills.

144. *Aikido.* 1 Hr. Introduction to beginning knowledge and skills in aikido.

145. *Karate.* 1 Hr. Introduction to beginning knowledge and skills in karate.

146. *Self-Defense.* 1 Hr. Introduction to beginning knowledge and skills in self defense.

147. *Kung Fu.* 1 Hr. Introduction to beginning knowledge and skills in kung fu.

149. *Tae Kwon Do.* 1 Hr. Introduction to beginning knowledge and skills in tae kwon do.

150. *Martial Arts Fitness.* 1 Hr. Introduction to beginning knowledge and skills in martial arts fitness.

152. *Racquetball.* 1 Hr. Introduction to beginning knowledge and skills in racquetball.

155. *Handball.* 1 Hr. Introduction to beginning knowledge and skills in handball.

156. *Riflery.* 1 Hr. Introduction to beginning knowledge and skills in riflery.

157. *Slow Pitch Softball.* 1 Hr. Introduction to beginning knowledge and skills in slow pitch softball.

158. *Indoor Soccer.* 1 Hr. Introduction to beginning knowledge and skills in indoor soccer.

159. *Soccer.* 1 Hr. Introduction to beginning knowledge and skills in soccer.

160. *Beginning Tennis.* 1 Hr. Introduction to beginning knowledge and skills in tennis.

161. *Tennis.* 1 Hr. Introduction to basic knowledge and skills for people who are familiar with tennis.

162. *Intermediate Tennis.* 1 Hr. Introduction to intermediate/advanced knowledge and skills in tennis.

164. *Weight Training.* 1 Hr. Introduction to beginning knowledge and skills in weight training.

165. *Conditioning.* 1 Hr. Introduction to beginning knowledge and skills in conditioning.

170. *Volleyball.* 1 Hr. Introduction to beginning knowledge and skills in volleyball.

173. *Beginning Swimming.* 1 Hr. Introduction to beginning knowledge and skills in swimming.

174. *Intermediate Swimming.* 1 Hr. Introduction to intermediate knowledge and skills in swimming.

175. *Lifeguard Training.* 1 Hr. Red Cross certification for lifeguards.

176. *Advanced Swimming.* 1 Hr. Introduction to advanced knowledge and skills in swimming.

179. *Orientation to Scuba.* 1 Hr. Introduction to beginning knowledge and skills in scuba diving.

182. *Bowling.* 1 Hr. Introduction to beginning knowledge and skills in bowling.

185. *Fencing.* 1 Hr. Introduction to beginning knowledge and skills in fencing.

186. *Outdoor Leisure Pursuits.* 1 Hr. Introduction to knowledge and skills in outdoor leisure pursuits.

188. *Folk, Square, and Ballroom Dance.* 2 Hr. This class will introduce the student to beginning levels of folk, square, and ballroom dance.

293 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

Physical Education Teaching (PET)

124. *Human Body: Structure and Function.* 2 Hr. Overview of the structure and function of the organ systems in the human body. Topics covered include the skeletal, muscular, nervous, digestive, respiratory, and cardiovascular systems.

125. *Principles of Human Movement.* 2 Hr. PR: PET 124. This course is designed to introduce prospective physical educators to the principles of human movement.

167. *Introduction to Physical Education.* 2 Hr. Historical and philosophical bases, major issues, and professional practices in physical education teaching.

175. *Motor Development.* 3 Hr. To examine changes in human movement behavior across the lifespan and the factors that contribute to those changes.

191 A-Z. *Special Topics.* 1-3 Hr.

206. *Behavioral Technology for Physical Education.* 2 Hr. Basic concepts and instructional techniques associated with applying behavior analysis to school-aged children.

228. *Curriculum in Physical Education.* 3 Hr. PR: Admission to the Physical Education Teacher Certification Program. Examination of curriculum and curriculum development; discussion of "hidden curriculum" issues.

233. *Pedagogy Theory and Application.* 5 Hr. PR: Admission to the Physical Education Teacher Certification Program. Applied pedagogical theory, including assessment, planning, design, management, and delivery of instruction in physical education settings.

276. *Special Physical Education.* 2 Hr. Examines motor developmental characteristics of various handicapped groups and emphasizes physical education role in remediating possible developmental deficiencies.

293. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

324. *Water Safety Instructorships.* 2 Hr. PR: Senior Lifesaving Certification. Teaching methods in swimming and water safety. Meet American Red Cross certification standards. Course completion carries eligibility for teaching swimming, lifesaving, and water safety.

330. *Exercise for School-Aged Children.* 3 Hr. Basic movement analysis; techniques of feedback about skills and performance for school-aged children.

337. *Teaching Track and Field.* 2 Hr. Basic concepts and instructional techniques for teaching track and field in public schools. (Activity)

338. *Teaching Wrestling.* 1 Hr. Basic concepts and instructional techniques for teaching wrestling in public schools. (Activity.)

339. *Teaching Volleyball.* 1 Hr. Basic concepts and instructional techniques for teaching volleyball in public schools. (Activity.)

340. *Teaching Soccer.* 1 Hr. Basic concepts and instructional techniques for teaching soccer in public schools. (Activity.)

341. *Teaching Basketball.* 1 Hr. Basic concepts and instructional techniques for teaching basketball in public schools. (Activity.)

342. *Teaching Flag Football.* 1 Hr. Basic concepts and instructional techniques for teaching flag football in public schools. (Activity.)

343. *Physical Education for Elementary Teachers.* 2 Hr. Philosophy, objectives, curriculum, and methods of teaching physical education activities for children.

344. *Teaching Field/Floor Hockey.* I, II. 1 Hr. PR: Admission to the Physical Education Teacher Certification Program. Basic concepts and instructional techniques for teaching field/floor hockey in public schools. (Activity)

350. *Teaching Primary Physical Education.* 1 Hr. Introduces prospective physical education teachers to the unique needs and characteristics of young children. Special emphasis is placed on developmentally appropriate practice. Students participate in clinical laboratory experiences involving young children.

351. *Educational Gymnastics.* 1 Hr. This course has been designed to provide students with opportunities to develop the lesson planning and teaching skills necessary to provide instruction in educational gymnastics.

352. *Teaching Elementary Fitness Education.* 3 Hr. Foundations, components of health-related fitness as well as appropriate curriculum for K-12, effective teaching principles, and the assessment of health-related fitness. Students will become eligible for Physical Best Health-Fitness Specialist Certification.

356. *Teaching/Using Lead-Up Games.* 2 Hr. Basic lead-up games and activities appropriate for school-aged children; development of cognitive, affective, and psychomotor competencies in rhythms, games, and sport activities for middle childhood students.

358. *Teaching Softball/Baseball.* 1 Hr. Basic concepts and instructional techniques for softball/baseball in public schools. (Activity.)

359. *Teaching Elementary Rhythms.* 1 Hr. Developing the cognitive, affective, and psychomotor competencies for teaching elementary rhythms in physical education.

361. *Elementary Fitness Lab.* 1 Hr. PR: PET 349. An introduction to the unique fitness needs of elementary and middle school children. Students participate in a clinical lab experience with children.

370. *Teaching Elementary Physical Education.* 3 Hr. This is about the content and methods of teaching elementary physical education.

384. *Kinderskills/Gym.* 2 Hr. This course stresses developing, implementing, and evaluating appropriate movement experiences for pre-school children. A laboratory with children is included.

400, *Kinderskills/Pool.* 2 Hr. This course stresses developing, implementing, and evaluating appropriate movement experiences for pre-school children in the aquatic environment. A laboratory with children is included.

410. *Laboratory in Pre-School Physical Education.* 1-6 Hr. Applied clinical experiences in a physical activity program which focuses on developing the motor skills of young children. Students can choose between land-based or water-based learning environments. Open to all majors.

420. *Laboratory in Physical Education.* 1-6 Hr. This course introduces students to the unique physical fitness needs of elementary and middle school children. Students participate in a clinical lab experience with children. Open to all majors.

446. *Teaching Badminton.* 1 Hr. Basic concepts and instructional techniques for teaching badminton in public schools. (Activity.)

448. *Teaching Golf.* 1 Hr. Basic concepts and instructional techniques for teaching golf in public schools. (Activity.)

451. *Secondary Fitness Laboratory.* 1 Hr. Scientific principles of strength conditioning and aerobic training.

452. *Teaching Outdoor Leisure Pursuits.* 2 Hr. Basic concepts and instructional techniques for teaching basic backpacking, orienteering, and snow skiing in public schools. (Activity.)

453. *Teaching Dance in Physical Education.* 2 Hr. Basic concepts and instructional techniques for teaching dance in physical education in public schools. (Activity.)

460. *Teaching Tennis.* 1 Hr. Basic concepts and instructional techniques for teaching tennis in public schools. (Activity.)

477. *Special Physical Education Practicum.* 1 Hr. PR: Open to departmental majors only. A supervised practice teaching experience in special physical education.

483. *Issues in Physical Education.* 2 Hr. Issues affecting the teaching of physical education links the elements of the student's professional preparation.

485. *Supervision in Physical Education.* 1 Hr. Evaluation and feedback techniques for supervising physical education teachers.

487. *Student Teaching: Elementary.* 3 Hr. COREQ: PET 488. A final, school-based practice teaching experience in elementary schools.

488. *Student Teaching: Secondary.* 3 Hr. COREQ: PET 487. A final, school-based practice teaching experience in secondary schools.

489. *Student Teaching Seminar.* 2 Hr. COREQ: PET 487 and PET 488. Discussions to enhance communication concerning the program's student teaching and stimulate critical thinking about the student teaching experience. (Seminar.)

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491 A-Z. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492. *Directed Study.* 1-6 Hr. Directed study, reading, and/or research.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Physical Science (PHSC)

101. *Introductory Physical Science 1.* 4 Hr. (For elementary education majors only.) Emphasis on practicing reasoning abilities necessary to carry out simple scientific inquiry. Major concepts include properties of matter and astronomy. Majority of class time is spent in laboratory activities and solving problems using an activity-based approach.

102. *Introductory Physical Science 2.* 4 Hr. PR: PHSC 101. Continuation of PHSC 101. Concepts include electricity, motion, heat and temperature, energy, and chemistry.

111. *General Physical Science 1.* 4 Hr. (Strongly recommended for freshmen and sophomores only.) Basic principles of physics and astronomy and science laboratory skills which are applicable to living in a modern and technological society. Included: energy resources, radioactivity, satellites, rockets, the solar system, and the origin of the universe.

112. *General Physical Science 2.* 4 Hr. (Strongly recommended for freshmen and sophomores only.) Basic principles of chemistry, geology, and meteorology and laboratory skills which are applicable to living in a modern technological society. Included: pharmaceuticals, household products, pollution, weather, earth minerals, earthquakes.

293. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

490. *Teaching Practicum.* 1-3 Hr. PR: PHYS 105 or consent. Teaching practice as a tutor or assistant. Opportunity to help teach an activity-based science course under the direction of experienced instructors. Emphasis on developing inquiry teaching skills useful for all levels of classroom instruction.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Physics (PHYS)

101. *Introductory Physics.* 4 Hr. PR: High school trigonometry and MATH 126. Conc: MATH 128 or MATH 4. The fundamental philosophy and principles of physics are applied to studies of mechanics, sound, heat, and thermodynamatics through demonstrations, problems, and experiments.

102. *Introductory Physics.* 4 Hr. PR:PHYS 101 and MATH 128. The fundamental philosophy and principles of physics are applied to studies of electricity, magnetism, optics, light, and atomic and nuclear physics through demonstrations, problems, and experiments.

105. *Conceptual Physics.* 4 Hr. Basic principles of physics and their relationship to our modern technological society. Major topics include properties of matter, electricity, optics, motion, heat and temperature, and energy. Nonmathematical approach emphasized.

107. *Physics of Music.* 3 Hr. For all students including those in the liberal and fine arts. (No science or music prerequisites.) The physical and psychophysical principles underlying the nature, production, transmission, reception, and reproduction of sound.

108. *Light, Vision, and Color.* 3 Hr. For all students including those in liberal and fine arts. Descriptive course emphasizing the basic principles of light with applications to color vision and optical phenomena in everyday environment and technology.

111. *General Physics.* 4 Hr. PR: A grade of C or better in MATH 155. Survey of classical mechanics, thermodynamics, and waves.

112. *General Physics.* 4 Hr. PR: PHYS 111. Survey of electricity, magnetism, and optics.

199. *Orientation to Physics.* 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities, and opportunities.

211. *Introduction to Mathematical Physics.* 3 Hr. PR: MATH 251, and PHYS 112. Review of basic calculus with application to physics; e.g. vector calculus and Maxwell's Equations, Fourier Series and the vibrating string, eigenvalues, eigenvectors and coupled oscillators. Complex algebra, linear algebra, differential equations, partical differential equations, Bessel functions, Legendre Polyomials, and Fourier Transforms.

290. *Teaching Practicum.* 1-3 Hr.

293 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

313. *Introductory Electronics.* 3 Hr. PR: PHYS 111 and PHYS 112. Principles and applications of integrated circuits and digital electronics.

314. *Introductory Modern Physics.* 4 Hr. PR: PHYS 112 and MATH 156. Topics of modern physics of interest to science majors and engineers; atomic and molecular structure and spectra, solid state and nuclear physics, relativity, and elementary particles.

321. *Optics.* 3 Hr. PR: PHYS 111 and PHYS 12 and MATH 261 A basic course in physical optics covering wave mathematics, propagation, polarization, interference, and diffraction; applications in geometrical optics and selected topics in scattering and quantum optics.

325. *Atomic Physics.* 3 Hr. PR: PHYS 213. Relativistic mechanics, atomic structure, and spectra.

331. *Theoretical Mechanics 1.* 3 Hr. PR: PHYS 111 and PHYS 112 or equiv.; PR or Conc: MATH 261. Scalar, vector, and tensor fields; curvilinear coordinate systems. Kinematics and dynamics of particles, systems of particles and rigid bodies.

332. *Theoretical Mechanics 2.* 3 Hr. PR or Conc: PHYS 331 or equiv. and MATH 261. Scalar, Vector, tensor fields; curvilinear coordinate systems. Lagrangian and Hamiltonian formulation. Relativistic motion.

333. *Electricity and Magnetism 1.* 3 Hr. PR: PHYS 111 and PHYS 112 or equiv. and PR or Conc: MATH 261. Electrostatics, electrostatics in matter, magnetostatics, magnetostatics in matter.

334. *Electricity and Magnetism.* 3 Hr. PR or Conc: PHYS 333 or equiv. and MATH 261. Maxwell's equations, reflection and refraction, wave guides and cavities.

341. *Advanced Physics Laboratory.* 1-3 Hr. PR: PHYS 111 and PHYS 112 and PHYS 213. Experiments in physics designed to complement theory courses, give experience in data taking and instrumentation, and learn methods of data evaluation and error analysis.

448. *Physics Seminar.* (No credit.) (Suggested for junior, senior, and graduate physics majors.) These lectures acquaint students with topics of current interest in physics.

451. *Introductory Quantum Mechanics.* 3 Hr. PR: PHYS 213 and MATH 261. Fundamental principles of quantum mechanics; state functions in position and momentum space, operators, Schrodinger's equation, applications to one-dimensional problems, approximation methods, the hydrogen atom, angular momentum, and spin.

461. *Thermodynamics and Statistical Mechanics.* 3 Hr. PR: PHYS 213 or equiv. and MATH 251. Introduction to the statistical foundations of thermodynamics; applications of the fundamental laws of thermodynamics to physical and chemical systems.

463. *Nuclear Physics.* 3 Hr. PR: PHYS 213 and MATH 251. Study of characteristic properties of nuclei and their structure as inferred from nuclear decays and reactions, leading to a knowledge of nuclear forces and models.

471. *Solid State Physics.* 3 Hr. PR: PHYS 213 or equiv. and MATH 251. Properties of crystalline solids; includes crystal structure, interatomic binding, lattice vibrations, electron theory of metals, and the band theory of solids with some applications.

481. *Plasma Physics.* 3 Hr. PR: PHYS 111 and PHYS 112 and PR or Conc: PHYS 334. Introductory course in the physics of ionized gases; particle and fluid treatment of plasmas, waves, equilibrium and stability, kinetic theory, and nonlinear effects.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

497. *Research.* I, II, S. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading may be S/U.)

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Plant Pathology (PPTH)

401. *General Plant Pathology.* I. 4 Hr. Nature and causes of plant diseases; methods of control.

470. *Forest Pest Management.* II. 4 Hr. PR: (FMAN 311 and BIOL 101 and BIOL 103 and PLSC 206) or BIOL 115 and BIOL 117. Relationship of insects and disease organisms to the forest ecosystem; recognition of agents that affect forest health; management strategies for regulating their damage. (Also listed as ENTO 470.)

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Plant Science (PLSC)

206. *Principles of Plant Science.* I, II. 4 Hr. PR: BIOL 101 and BIOL 103. Basics of the nature, history, classification, role, distinction, structure and function, reproduction, improvement, culture, pests, storage handling, production and marketing, and utilization of agricultural plants.

293 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Political Science (POLS)

101. *Introduction to Political Science.* I, II, S. 3 Hr. Introduction to government and politics. Origins, forms, and functions of the state; organization and processes of government; and the behavior of groups and individuals in various political systems.

102. *Introduction to American Government.* I, II, S. 3 Hr. General survey of American national government and politics.

103. *Global Political Issues.* I, II, S. 3 Hr. Analysis of issues in post-cold war international politics, ranging from traditional major power diplomacy and intervention to the newer problems of economic interdependence and development, human rights, population pressures on limited resources, and the environment.

107. *Modern Political Ideologies.* I, II. 3 Hr. A survey of some of the major competing ideologies in the modern world, including capitalism, communism, socialism, fascism, and democracy.

199. *Orientation to Political Science.* 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

210. *Law and the Legal System.* I, II, S. 3 Hr. Introductory course on the role of law in the political system. Includes a survey of subfields in United States law and an examination of participants, processes, and policy making in the United States legal system.

220. *State and Local Government.* I, II. 3 Hr. The legal basis, structure, politics and operation of state and local governments, in the content of the American federal system.

230. *Introduction to Policy Analysis.* I, II. 3 Hr. Examination of the causes and consequences of public policies. Substantive policies examined include: civil rights, housing, social services, environment, health, law enforcement, education, and taxation.

240. *Introduction to Public Administration.* I, II. 3 Hr. The development, organization, and processes in governmental administration in the United States.

250. *Introduction to Comparative Politics.* I, II. 3 Hr. An introduction to the political and governmental systems of industrialized and developing countries. Focuses on approaches to comparative political study, political cultures and participation, and government structures, processes, and policy performance.

260. *Introduction to International Relations.* I, II. 3 Hr. Theories and concepts in international politics and their application to contemporary world politics.

270. *History of Political Thought 1.* I. 3 Hr. Major political philosophers and ideas from the Greeks to the 17th century.

271. *History of Political Thought 2.* II. 3 Hr. Major political philosophers and ideas of the 17th, 18th, and 19th centuries, including Hobbes, Locke, Montesquieu, Rousseau, Burke, Bentham, Mill, Hegel, and Marx.

293 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

300. *Empirical Political Analysis.* I, II, S. 3 Hr. Designed to provide a basic understanding of how to read and conduct empirical political science research. Topics include research design, hypotheses testing, data collection, and statistical analysis. No prior knowledge of computers or statistics required.

310. *American Presidency.* I, II. 3 Hr. Institutional, behavioral, and societal forces which have given rise to the modern presidency; factors which enhance and constrain the exercise of presidential power over those contituencies with which the president must interact; the nature and consequences of the presidential decision-making process; desirability and/or feasibility of reforming the presidency.

311. *Political Parties and Elections.* II. 3 Hr. Parties and elections in America; emphasis on nomination and general election processes, campaigns, the mass media, campaign finance, voting, the electoral college, and parties in government.

312. *Appellate Judicial Process.* II. 3 Hr. PR: POLS 210 or Consent. The role of appeals courts and judges in American politics. Topics include appellate court organization and processes, the quantitative and qualitative analysis of judicial behavior, and the influence of courts on public policy.

313. *American Constitutional Law.* I. 3 Hr. The role of the Constitution in the American political system. Topics include the political concept of constitutionalism; the role of the Supreme Court in the political process; division of powers among the three branches of government; and the constitutional relation between the national government and the states.

314. *Civil Liberties in the United States.* I, II. 3 Hr. Issues in constitutional law concerning personal liberties against government action. Topics include free speech, press, and association; religious freedoms; abortion; the right to privacy; due process of law; and criminal procedure safeguards.

315. *Law and Public Policy.* I, II, S. 3 Hr. PR: POLS 210 or Consent. Advanced examination of the role of trial courts in policymaking, including agenda-setting and policy formulation by courts, the outcomes of policy litigation, and the politics of legal reform.

316. *Public Opinion and Politics.* I, II. 3 Hr. In-depth treatment of the origins, content, and impact of public opinion in American politics; political ideology, partisanship, socialization, mass media, opinion polls, and survey research techniques.

317. *Interest Groups and Democracy.* I, II, S. 3 Hr. The role of interest groups in American politics, focusing on their distribution and internal dynamics, their involvement in campaigns and elections, their influence on public policy, and their place in a democratic system.

318. *Legislative Process.* II. 3 Hr. Structure, organization, and processes of legislative bodies; powers of the legislature; detailed study of law-making processes and procedures.

321. *West Virginia Government.* I, II. 3 Hr. Organization and operation of the state government of West Virginia.

331. *Criminal Law, Policy, and Administration.* I, II. 3 Hr. Legal and administrative approach to policy issues in criminal justice. Focuses on the criminal law, police, court decisions, and the implementation of law and policy in the criminal field.

333. *Politics of Social Welfare.* I, II. 3 Hr. Questions of poverty and inequality: who are the poor; what causes economic inequality; what have been governmental and private solutions to the problem of poverty; and what successes and failures have there been in the war against poverty.

334. *Politics of Economic Policy.* I, II. 3 Hr. An examination of U.S. economic policy, with an emphasis on the political considerations that influence policy development and implementation in government regulation, taxation, and spending.

335. *Civil Rights Policy and Politics.* II. 3 Hr. Analysis of the law, politics, and policy related to discrimination in public accommodations, voting, education, housing, and employment based on race, gender, national origin, handicapped status, and age.

336. *Energy Policy and Politics.* II. 3 Hr. Explores the formulation and implementation of energy policy, including a discussion of scientific, risk, technological, economic, and political variables affecting policy with emphasis on national security, environmental protection, resource management, and economic growth problems.

337. *Gender, Politics, and Policy.* I. 3 Hr. Comparative study of how gender differences affect politics across the world. Emphasis on advanced industrial democracies. Topics include: political attitudes and behavior, gender differences in political recruitment, and the impact of gender on public policy.

338. *Environmental Policy.* I. 3 Hr. Explores the formulation and implementation of environmental policy, using both a policy process approach and policy analysis. Includes a discussion of the scientific, technological, risk, economic, and political variables which affect policy making in this area.

342. *Bureaucratic Politics.* I. 3 Hr. Analysis of the nature and processes of American public administration (political, legal, economic, and social), including the role of bureaucracy in a democracy.

344. *Administrative Law.* II. 3 Hr. Administrative powers and limitations; procedures in administrative adjudication and rule-making; discretion, ultra vires as a check on administrators; notice and hearing; administrative penalties; judicial control; and administrative liability.

350. *Government of Japan.* II. 3 Hr. Survey of political institutions and governmental processes in Japan with special emphasis on the analysis of political problems in the post-war period.

351. *Russian and Post-Soviet Politics.* II. 3 Hr. Survey of politics and government in Russia and in the states of the former Soviet Union.

353. *Western Democratic Governments.* I, II. 3 Hr. Cross-national and/or country based analysis of selected western democracies. Individual countries analyzed will vary, but may include Canada, Great Britain, France, Italy, and the European Union.

354. *Government of China.* I. 3 Hr. Survey of political institutions and governmental process in the People's Republic of China with special emphasis on the analysis of political problems since 1949.

355. *Governments of Latin America.* I. 3 Hr. Comparative study of the government and politics of the Latin American states.

356. *Politics of the Middle East.* II. 3 Hr. Survey of the domestic and international political dynamics of the Middle East.

358. *Politics of Africa.* II. 3 Hr. Historical legacies and current political processes of tropical African countries.

361. *International Organization.* II. 3 Hr. International agencies created since the close of World War II. Analysis of the development of international law and the United Nations.

363. *International Law.* I. 3 Hr. Law governing relations among nations, including development of rules, means of enforcement, and conflict between theory and practice.

364. *American Foreign Relations.* I, 3 Hr. PR: POLS 260 or Consent. Examination of contemporary U.S. foreign policy and its historical, cultural, and domestic political roots. Substantive and theoretical issues in understanding foreign relations since WW II, including both continuity and change in the emerging post-cold war system.

366. *Russian Foreign Policy.* II. 3 Hr. The origins and conduct of Russian foreign policy during the Soviet and post-Soviet periods. Emphasis will be placed on the foreign politics of the former Soviet Republics.

367. *Latin America in International Affairs.* II. 3 Hr. Relations of Latin American states among themselves, with the United States, the United Nations, regional organizations, and nonwestern states. In-depth analysis of the Monroe doctrine and its corollaries and the inter-American system.

368. *Politics of War and Peace.* 3 Hr. PR: POLS 260 or Consent. Analysis of great power politics in the international system. Examination of theories of war, historical patterns of the balance of power, and origins of the 20th century's major conflicts: WW I, WW II, and the Cold War.

369. *Far East International Affairs.* II. 3 Hr. International relations of countries of the Far East with emphasis on historic roots of recent conflicts, the roles of the United States and other major powers, confrontation between the countries in the region, and the regional cooperation and security problems in the post-World War II period.

372. *Modern Political Thought.* I. 3 Hr. Beginning with early Marxist thought, this course examines the evolution of the concepts of rights, justice, liberty, democracy, and equality from 1850 through the present, using the works of both classical and contemporary political theorists.

373. *American Political Philosophy.* I, II. 3 Hr. Major American political ideas and their influence upon American society and government from the seventeenth century to the present.

375. *Psychological Theories of Politics.* II. 3 Hr. Introduction to rational choice theory and various psychological theories of politics; application of psychological theories to both international relations and American politics.

389 A-Z. *Selected Topics.* (Honors.) I, II. 3 Hr.

487. *Capstone: Senior Paper.* I, II. 3 Hr. One of three capstone options for political science majors. Students choosing this option undertake a faculty-supervised independent research project culminating in a written research paper and oral presentation at a faculty/student colloquium.

488. *Capstone: Political Simulation.* I, II. 3 Hr. One of three capstone options for political science majors. Students choosing this option conduct research and participate in role-playing exercises through planned political simulations involving both U.S. politics and international relations.

489. *Capstone: Citizenship Seminar.* I, II. 3 Hr. One of three capstone options for political science majors. Students choosing this option participate in a seminar focusing on the role of citizens in a democracy, with emphasis on experiential learning through civic participation.

491 A-Z. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours). Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Portuguese (PORT)

101. *Elementary Portuguese 1.* 3 Hr.

102. *Elementary Portuguese 2.* 3 Hr. PR: PORT 101 or equiv.

203. *Intermediate Portuguese 1.* 3 Hr. PR: PORT 102 or equiv.

204. *Intermediate Portuguese 2.* 3 Hr. PR: PORT 203 or equiv.

293. *Special Topics.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours). Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Psychology (PSYC)

101. *Introduction to Psychology.* 3 Hr. Survey of general psychology.

201. *Psychology as a Profession.* 1 Hr. PR: PSYC 101. Orientation to opportunities for experience, employment, and graduate and professional training in psychology. (Grading will be Pass/Fail.)

202. *Research Methods in Psychology.* 3 Hr. PR: PSYC 101 and STAT 211. Research methods in experimental, developmental, clinical, and community-social psychology in the laboratory and the natural environment.

231. *Leadership and Human Relations.* 3 Hr. PR: PSYC 101. Concentrates on principles of psychology that can be applied to improving relations with others, as well as being a more effective leader. Pragmatic orientation includes using the principles to solve problems in relationships, small organizations, and large systems.

232. *Sex Roles and Behavior.* 3 Hr. PR: PSYC 101. Relates sex-typed behavior to physiological, social, and cultural processes. Current social concerns such as rape, abortion legislation, child care, and expanded career options for both sexes, are examined from a psychological perspective.

241. *Introduction to Human Development.* 3 Hr. PR: PSYC 101. Survey of human psychological development across the life span with emphasis on change in biological, cognitive, and social-emotional processes. Special attention given to theoretical, conceptual, methodological, and practical issues.

251. *Introduction to Social Psychology.* 3 Hr. PR: PSYC 101. Examination of social interaction and behavior from a psychological perspective. Topics include: attraction, social perception and cognition, attitudes and attitude change, social influence and group process, prosocial behavior and aggression, cultural influence, and prejudice.

281. *Introduction to Abnormal Psychology.* 3 Hr. PR: PSYC 101. Introduction to major categories of behavior disorders, etiology, prevention, and treatment.

293 A-Z. *Special Topics.* 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

301. *Biological Foundations of Behavior.* 3 Hr. PR: PSYC 101 and PSYC 202. Introduction to animal behavior. Survey of fundamental concepts (evolution, genetics, adaptation, and learning) and research methods in understanding animal behavior, including primate species. Includes laboratory exercises and demonstrations.

302. *Behavior Principles.* 4 Hr. PR: PSYC 101, PSYC 202. Principles of behavior and learning and the significance of these principles for psychological theory and application; laboratory exercises and demonstrations.

331. *History and Systems of Psychology.* 3 Hr. PR: (PSYC 202 or PSYC 231 or PSYC 232 or PSYC 241 or PSYC 251 or PSYC 293) and at least junior or senior standing. A survey of psychology from its origins in philosophy, biology, and physics through the early major schools of psychological thought to modern perspectives on the science of behavior and its applications to human affairs.

342. *Prenatal and Infant Development.* 3 Hr. PR: PSYC 241 and junior or senior standing. Behavior and development from conception to two years. Includes behavioral genetics and hazards of prenatal development, as well as sensory-motor, cognitive, language, and socioemotional behavior during infancy.

343. *Child and Adolescent Development.* 3 Hr. PR: PSYC 241 and junior or senior standing. Theory and research on major psychological processes in childhood and adolescence; maturation, personality, socialization, sensory, and cognitive development.

345. *Adulthood and Aging.* 3 Hr. PR: PSYC 241 and junior or senior standing. Psychological issues in the study of adulthood, with an emphasis on the characteristics of older adults. Topics include the psychosocial and biological context of aging, cognitive and personality changes from early to late adulthood, psychopathology in later life, dementia, issues in caregiving, and death and dying.

351. *Topics in Social Psychology.* 3 Hr. PR: PSYC 251 and junior or senior standing. Social factors that determine human behavior, survey of research in selected areas of social psychology and their implications for social phenomena.

362. *Psychological Assessment.* 3 Hr. PR: (PSYC 202 or PSYC 231 or PSYC 232 or PSYC 241 or PSYC 251 or PSYC 293) and at least junior standing. Psychometric theory and development of psychological assessment instruments. Includes behavioral, personality, intellectual, neuropsychological, forensic, achievement, and aptitude assessment.

363. *Personality Theory.* 3 Hr. PR: (PSYC 202 or PSYC 231 or PSYC 232 or PSYC 241 or PSYC 251 or PSYC 293) and at least junior standing. Theoretical and empirical readings in a survey of major perspectives in personality theory, including dynamic, cognitive, humanistic, and behavioral.

364. *Psychology of Adjustment.* 3 Hr. PR: (PSYC 202 or PSYC 231 or PSYC 232 or PSYC 241 or PSYC 251 or PSYC 293) and at least junior standing. Dynamic principles of human personality adjustment.

379. *Community Psychology.* 3 Hr. PR: (PSYC 202 or PSYC 231 or PSYC 232 or PSYC 241 or PSYC 251 or PSYC 293) and at least junior standing. Psychological principles applied to treatment and intervention at the community level; manpower development, organizational change, and systems analysis.

382. *Exceptional Children.* 3 Hr. PR: PSYC 241 and junior or senior standing. Exceptional mental retardation or advancement; organic disabilities having behavioral consequences, such as cerebral palsy or deafness; and behavior disorders.

401. *Psychology Capstone Experience.* 1 Hr. PR: PSYC 101 and PSYC 201 and STAT 211 and senior standing. Experience in coursework, research, or service that integrates knowledge gained as a major in psychology. To be taken concurrently with capstone experience, details of which are to be determined in consultation with advisor.

411. *Applying to Graduate School.* 1 Hr. PR: Senior psychology major. Designed to guide students through the process of applying to graduate school in psychology. Students will investigate graduate training alternatives, select potential graduate programs, complete application packages, and prepare for interviews. (Grading will be Pass/Fail.)

419 A. *Seminar in Methodology.* I, II. 1-3 Hr. (May be repeated for credit with consent). Current problems and techniques in research design, data analysis, and research methods.

423. *Cognition and Memory.* 3 Hr. PR: PSYC 202 and junior or senior standing. Theoretical and empirical issues in cognitive psychology. Topics include mechanisms and theories of attention, memory, language, and conceptual processes.

424. *Learning and Behavior Theory.* 3 Hr. PR: PSYC 302 and junior or senior standing. Advanced course in empirical and theoretical issues in the psychology of learning.

425. *Perception.* 3 Hr. PR: PSYC 202 and junior or senior standing. Survey of the structure and function of human sensory systems (primarily visual and auditory), perceptual issues, and theories.

426. *Physiological Psychology.* 3 Hr. PR: PSYC 301 and junior or senior standing. Advanced study of the physiological mechanisms of behavior. Topics include neural and endocrine mechanisms of behavior and issues, methods, and findings in behavioral neuroscience.

474. *Behavior Modification.* 3 Hr. PR: PSYC 302 and junior or senior standing. Basic principles of behavior and their application to changing significant human behavior. Includes clinical, educational, parenting, industrial/organizational, community, and other applications.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant. (No more than three hours of PSYC 490 may be counted toward the 44 hours of psychology to which psychology majors are limited.)

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

495. *Independent Study.* 1-6 Hr.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Public Relations (PR)

215. *Introduction to Public Relations.* 3 Hr. (Open to all University students.) Introduces the student to the principles of public relations. Definition and historical development, opportunities and challenges, techniques, and management of public relations are included.

319. *PR Editing and Design.* 3 Hr. PR: JRL 318 and PR 215. Editing and production techniques for public relations media (brochures, reports, newsletters, etc.) including copy preparation, typography, graphic design, layout, and desktop publishing.

321. *Public Relations Research and Theory.* 3 Hr. PR: STAT 211 and JRL 318 and PR 215.

324. *Public Relations Writing and Applications.* 3 Hr. PR: 319 or JRL 319. Writing, design, graphics, and desktop publishing as major tools of public relations practitioners and planners.

422. *Public Relations Case Studies.* 3 Hr. PR: 324 and JRL 421 or consent. Seminar based on in-depth studies of public relations programs developed and applied in support of our institutions. Primary emphasis on successful campaigns, but unsuccessful efforts also will be examined for causes of failure.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant. (Course will be graded on a Pass/Fail basis.)

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development. (Grading will be Pass/Fail.)

493 A-Z. *Special Topics.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent. (Grading will be Pass/Fail.)

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Reading (RDNG)

381 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Special topics or research in reading and language arts for master's degree studies in reading.

403. *Literature for Children.* 3 Hr. A survey of children's literature, with attention to historical development as well as current trends. Emphasizes selection, critical evaluation, and utilization of literary materials for developmental, recreational, and curriculum needs. Appropriate media included.

422. *Reading in the Content Areas.* I, II. 2 Hr. Skills and strategies needed by content area teachers to reinforce the reading skills necessary for the effective learning of secondary students in the content areas.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (may be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

Recreation, Parks, and Tourism Resources (RPTR)

142. *Introduction to Recreation, Parks, and Tourism.* II. 3 Hr. Recreation, parks, and tourism philosophy, environments, agency contexts, historical antecedents, service delivery systems, special settings and populations, leadership programs, and professional challenges. Thirty-hour field placement with local recreation, park, or tourism agency.

143. *Leisure and Human Behavior.* I. 3 Hr. An interdisciplinary approach analyzing the role of leisure in modern American life. Play, games, work, and recreation are studied as aspects of human behavior affected by global, physical, societal, and personal concerns.

145. *Recreation Services for Special Populations.* I. 3 Hr. PR: Consent. Introductory analysis of current therapeutic recreation and park services to include members of special populations; familiarization with planning for the conduct of such services.

242. *Fundamentals of Nature Interpretation.* II. 3 Hr. PR: Recreation and parks junior or Consent. Methods and techniques of interpreting the natural environment to individuals and groups.

251. *Leadership in Recreation, Parks, and Tourism.* I. 3 Hr. PR: RPTR major or Consent. Leadership functions and techniques, group dynamics, supervision, and use of volunteers. (Field placement with a local agency, some transportation costs.)

263. *Program Planning in Recreation, Parks, and Tourism.* II. 3 Hr. PR: RPTR major or Consent. Fundamentals of general program planning, needs, facilities, age groups, local customs, climatic factor, etc.; settings such as parks, playgrounds, indoor centers, playing fields, hospitals, voluntary agencies, industrial settings, and campuses.

293 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

335. *Management in Recreation, Parks, and Tourism Organizations.* II. 3 Hr. PR: 12 Hr. of Recreation, parks, and tourism courses, junior standing, or Consent. Principles of administration as applied to the operation of recreation, parks, and tourism organizations, including policy, legal foundations, organization, personnel, and finance.

365. *Planning and Design in Recreation, Parks, and Tourism.* I. 3 Hr. PR: Recreation, parks, and tourism major or Consent. Study of planning and design concepts, standards and guidelines, use continuum, grants-in-aid, and planning of selected areas and facilities: parks, pools, centers, and recreation areas.

433. *Wildland Recreation Management.* I. 3 Hr. PR: FMAN 212 or Consent. Topics include an analysis of administrative agencies concerned with wildland management; methods of ameliorating human impact on outdoor recreation resources; discussion of philosophies underlying wilderness recreation; and a review of contemporary controversies concerning wildlands.

434. *Wilderness in American Society.* II. 3 Hr. PR: RPTR 433 or Consent. A seminar examining political, sociological, and environmental aspects of American wilderness. A discussion on articles concerning wilderness preservation, management, and aesthetics.

439. *Natural Resource Tourism.* I. 3 Hr. PR: Junior standing. Tourism in natural settings; emphasis on sustainable tourism development and natural resource stewardship. (Field trip required; some transportation costs.)

442. *Environmental, Historical, and Cultural Interpretation.* II. 3 Hr. PR: Junior standing. Philosophy and methods of locating source material for and interpreting the historical, cultural, and natural resources of an area; developing and evaluating the quality of interpretive programs, brochures, exhibits, waysides, trails, and school-based curriculum.

448. *Environmental Concerns in Outdoor Recreation.* I. 3 Hr. PR: Consent. Understanding and interpreting environmental concerns within the context of outdoor recreation.

450. *Evaluation in Recreation and Parks.* I. 3 Hr. Evaluation in recreation, parks, and tourism resources with concentration on program assessment methods. Data collection techniques and applications specific to the evaluation of recreation, parks, and tourism programs and activities will be studied.

485. *Professional Development Seminar.* I. 3 Hr. PR: Senior standing and completion of professional internship. Capstone course synthesizing professional development and internship experience.

488. *Internship.* I. 3 Hr. PR: Completion of required RPTR courses for the B.S.R.; internship must relate to student's area of emphasis and have prior approval of instructor. Supervised, full-time leadership responsibility with a recreation agency for a minimum of eight weeks.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491 A-Z. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Religious Studies (RELG)

105. *Introduction to Issues in Religious Studies.* 3 Hr. Leading issues involved in religious studies: transcendence, the God question, evil, redemption, community, eschatology, symbolism, ethics, examples of the relationship between religion and culture.

200. *Introduction to the Gospels.* 3 Hr. Introduction to the origin and content of the Synoptic Gospels of the New Testament (Matthew, Mark, Luke.) Discusses a number of basic theological issues and relates them to the contemporary situation.

201. *Introduction to Life/Thought of Paul.* 3 Hr. Introduction to the life and theology of Paul, involving a study of the letters of Paul in the New Testament and other pertinent early Christian literature. Discusses a number of basic theological issues and relates Scripture teachings to the contemporary situation.

202. *Introduction to the Old Testament 1.* 3 Hr. The story of Israel, her religious life, and great personalities up to about 800 B.C., based on a study of Genesis through II Kings. Basic theological and ethical issues are discussed in relation to the contemporary situation.

203. *Introduction to the Old Testament 2.* 3 Hr. The story of Israel, her religious life, and great personalities from 800 B.C. to about 100 B.C., based on a study of the prophetic and wisdom literature of the Bible. Basic theological and ethical issues are discussed in relation to the contemporary situation.

210. *Contemporary Theology 1.* 3 Hr. Issues include: function of reason in Judaeo-Christian faith and relationship of reason and revelation to each other; Judaeo-Christian understanding of history; the question of biblical literalism.

220. *History of Christian Thought 1.* 3 Hr. A study of significant people and movements of thought among the Christians and the way in which these contributed to answering the perennial questions of religion and culture from a Christian perspective. Covers the history of Christian thought to 1500.

221. *History of Christian Thought 2.* 3 Hr. A study of significant people and movements of thought among the Christians and the way in which these contributed to answering the perennial questions of religion and culture from a Christian perspective. Covers the history of Christian thought from 1500 to the present.

222. *Origins of Judaism.* 3 Hr. Main beliefs and practices of the Jewish religion in its formative period, 500 B.C. to 500 A.D. Selections from the late Old Testament writings, the Apocrypha and Pseudepigrapha, the Dead Sea Scrolls, and rabbinical literature.

230. *Religions of India.* 3 Hr. Proto-Indian religion, Hinduism, beginnings of Buddhism, Jainism, Sikhism; historical and theological foundations; developments of thought; and contemporary expressions and encounters with the modern world.

231. *Religions of China and Japan.* 3 Hr. Buddhism, Confunianism, Taoism, Shintoism; historical and theological foundations, developments of thought; and contemporary expressions and encounters with the modern world.

232. *Islam & Near Eastern Religions.* 3 Hr. The ancient religions of Mesopotamia, Egypt and Iran, and the origin and growth of Islam; historical and theological foundations; developments of thought; scriptures; and contemporary expressions and encounters with the modern world.

250. *Biblical Ethics/Current Issues.* 3 Hr. Principal types of ethics; biblical teaching on sin, guilt, law, grace, the state, perfection, etc., with application to contemporary issues: bioethics, euthanasia, ecology, sex, cybernation, etc.

293 A-Z. *Special Topics.* 3 Hr. Investigation of topics not covered in regularly scheduled courses.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492. *Directed Study.* I, II, S. 1-3 Hr. Directed study, reading, and/or research.

493 A-Z. *Special Topics.* 3 Hr. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. *Seminar.* 3 Hr. PR: A previous religious studies course. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-6 Hr. PR: Consent.

497. *Research.* 1-6 Hr. Independent research projects.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Resource Management (RESM)

293 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

390. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. Independent Study. 1-3 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Russian (RUSS)

101. *Elementary Russian 1.* 3 Hr. PR: No prior study of the language. Introduction to the sound and writing systems of the language, with emphasis on listening, reading, speaking, and writing.

102. *Elementary Russian 2.* 3 Hr. Continuation of RUSS 101. Introduction to the sound and writing systems of the language, with emphasis on listening, reading, speaking, and writing.

203. *Intermediate Russian 1.* 3 Hr. PR: RUSS 102. Continued development of basic skills in listening, reading, speaking, and writing Russian.

204. *Intermediate Russian 2.* 3 Hr. PR: RUSS 203. Continuation of RUSS 203. Capstone course for the RUSS 101 through 204 sequence and foundation for advanced Russian study. Continued development of basic skills in listening, reading, speaking, and writing Russian.

293. *Special Topics.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

301. *Conversation and Composition 1.* 3 Hr. PR: RUSS 204. Emphasis on development of written and oral communicative skills of contemporary Russian.

302. *Conversation and Composition 2.* 3 Hr. PR: RUSS 301. Continuation of RUSS 301. Emphasis on development of written and oral communicative skills of contemporary Russian.

303. *Advanced Structure and Reading.* 3 Hr. PR: RUSS 204. Development of communicative skills, with emphasis on reading authentic texts and review of Russian language structures.

304. Advanced Structure and Reading. II. 3 Hr. PR: RUSS 109. Continuation of RUSS 109. Development of communicative skills, with emphasis on reading authentic texts and review of Russian language structures.

331. *The Russian Short Story.* I. 3 Hr. PR: RUSS 4. Reading, discussing, and writing in Russian about short stories of selected nineteenth-century Russian writers.

332. *The Russian Short Story.* 3 Hr. PR: RUSS 204. Reading, discussing, and writing in Russian about short stories of selected contemporary Russian writers.

341. *Survey of Russian Literature.* 3 Hr. PR: RUSS 204. A major works of selected Russian authors from the beginning through the nineteenth century, including those of Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, and Tolstoy.

342. *Survey of Russian Literature.* 3 Hr. PR: RUSS 204. Major works of selected Russian authors from the beginning of the twentieth century to the present.

391. *Advanced Topics.* 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

451. *Russian Culture.* 3 Hr. PR: RUSS 204. A study of Russian civilization, customs, and ethos.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Safety and Environmental Management (SEM)

101. *Energy and the Environment.* 3 Hr. Regional and global study of the historical, social, and economic impact resulting from the production, processing, transportation, and utilization of fossil fuels on the environment. Alternative energy technologies, government regulations, and alternative fuels are discussed.

470. *Managing Construction Safety.* 3 Hr. Focuses on management and planning aspects of construction safety, including fall protection, scaffolding, excavation, hand and power tools, cutting and welding, others. Compliance aspects of 29CFR 1926 (with various subparts) concerned with building and highway construction.

471. *Motor Fleet Safety.* 3 Hr. Safety elements of automotive transportation including design, operation, planning, control, and effects of legislation.

482. *Environmental Energy Impacts.* 3 Hr. Environmental effect caused by the development and use of fossil fuels and alternative energy sources. Course includes history, compliance, energy economics, field trips, and laboratory and/or project presentation.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

Social and Cultural Foundations (SCFD)

100. *Education In The American Culture.* 3 Hr.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* 1-6 Hr.

494. *Seminar.* 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Research.* 1-6 Hr. Independent research projects.

Social Work (SOWK)

105. *Social Welfare Institutions.* 3 Hr. Examines the historical development of social welfare in the United States and the values that shape social welfare institutions. (3 hr. lec.)

147. *Human Diversity.* 3 Hr. (Must be completed before applying to the major.) Covers a range of diverse populations especially those historically subjected to oppression and social and economic injustice. Addresses the causes and effects of institutionalized forms of oppression.

151. *Introduction to Social Work.* 3 Hr. PR: Consent. (Must be completed before applying to the major.) Overview of the social welfare field and social work profession. Emphasizes social work values and ethics.

293 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

300. *Social Welfare Policy and Services 1.* 3 Hr. PR: SOWK 151. Review of current and historical perspectives on the social welfare institution. Includes philosophical and ideological factors that influence U.S. social welfare policy and services.

310. *Social Welfare Policy and Services 2.* 3 Hr. PR: SOWK 300. Explores the social welfare policy-making process. Analyzes current social welfare programs and possible reforms, policy responses to social issues, and strategies for shaping and influencing policy and their impact on vulnerable populations.

319. *Skills Lab 1.* 1 Hr. PR: SOWK 151. This experiential component of SOWK 320 focuses on developing communication and interviewing skills, relationship building, and problem solving. (Grading will be Pass/Fail.)

320. *Social Work Methods 1.* 3 Hr. PR: SOWK 151. Presents a broad range of generalist practice knowledge, values, and skills: the problem-solving process, systems theories, developing client-worker relationships, interviewing, generalist roles, and professional values. Focuses on theories and interventions with individuals and families, and introduces evaluation of practice effectiveness. Requires 30 hours of volunteer activity.

321. *Field Experience in Social Work.* 1-12 Hr. (Open to non majors by consent) Develops basic helping skills through supervised volunteer or work experience in a community agency or program.

322. *Social Work Methods 2.* 3 Hr. PR: SOWK 319 and SOWK 320. Builds on Methods 1 by focusing on more specific theories, methods, and intervention models with groups, communities, and organizations. Introduces program evaluation. Requires 30 hours of volunteer activity.

323. *Skills Lab 2.* 1 Hr. PR: SOWK 319 and SOWK 320. This experiential component of SOWK 322 includes skills in relationship building, problem solving, and planned change activities with groups, communities, and organizations. (Grading will be Pass/Fail.)

330. *Human Biology for Social Work.* 3 Hr. PR: SOWK 151. Provides a basic understanding of the bio-psycho-social paradigm and the dynamics of human physiology important in social work practice.

350. *Human Behavior for Social Work.* 3 Hr. PR: SOWK 319 and SOWK 320 and SOWK 330. Examines, through an ecosystems framework, how individuals develop, function, and interact with a wide range of social systems. Applies social, biological, and behavioral sciences, and social work research and theory, to assessment and intervention. Emphasizes systemic factors that limit certain populations' life opportunities and identifies practices implications.

360. *Social Work Research and Stats.* 3 Hr. PR: SOWK 300. Introduces and applies research and statistical methods social workers use to evaluate practice and programs, to critique research, to build knowledge for practice, and to address ethical standards of scientific inquiry.

491. *Professional Field Experience.* 1-12 Hr. PR: Consent. (May be repeated up to a maximum of 12 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. Independent *Study.* 1-6 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

Sociology and Anthropology (SOCA)

101. *Introduction to Sociology.* 3 Hr. Basic course intended to develop a perspective about the nature of social processes and the structure of society.

105. *Introduction to Anthropology.* 3 Hr. Essentials of human evolution and prehistory with a concentration on the varieties of languages and cultures found among peoples of the world.

107. *Social Problems.* 3 Hr. Causes of social disorganization in modern society and social life. Emphasis on research findings derived from studies of contemporary American society.

221. *Families and Society.* 3 Hr. Historical comparative approach to changing structure and functions of the family institution. Effect of economic, demographic, and cultural changes on relationships, gender roles, marriage, childcare; variations by socioeconomic status, race, ethnicity, gender, sexual orientation.

222. *The Community.* 3 Hr. Social structure of small towns and rural communities. The community power structure and political participation as they relate to community planning.

223. *Death and Dying.* 3 Hr. Sociological and anthropological perspectives on death and dying. Examines sociopsychological and structural factors supporting the beliefs and practices associated with the institution of death, both historically and in contemporary society.

232. *Criminology.* 3 Hr. Exploration of various theories of criminal behavior; emphasis on a critical study of the criminal justice system and efforts to reform the penal system.

233. *Juvenile Delinquency.* 3 Hr. Nature, extent, and causal explanation of forms of juvenile deliquency. The nature of juvenile courts, the correctional systems, and prevention programs. Emphasizes current issues.

235. *Race Relations.* 3 Hr. Causes and consequences of prejudice and discriminatory practices involving minority group members. Emphasis is on blacks, but social and economic conditions of Indians and other racial and religious minorities are also discussed.

238. *Ethnic Groups.* 3 Hr. Study of the major ethnic groups in the U.S., their social histories and present importance to the nation. Family histories are explored. Includes study of Irish, Polish, Italian, Greek, Mexican, Asian, and Native Americans.

240. *Introduction to Sociology of Appalachia.* 3 Hr. Sociological perspectives on the history, culture, and social organization of Appalachia. Examines regional images and stereotypes, work, family, community, religion, education, politics, musical traditions, literature, and social life. Emphasizes economic history, stratification, and social change.

248. *Lessons of the Vietnam War.* 3 Hr. Political, legal, social, and military controversies surrounding the Vietnam War are examined through sociological perspectives on statification, race relations, social movements, conflict resolution, deviance, and social control. Features role play simulations, guest interviews, videos, lectures.

250. *Archeology Laboratory.* 1 Hr. Coreq: SOCA 258. Experiential activities to accompany SOCA 258 lecture material.

251. *Culture and Language.* 3 Hr. Examines anthrolpological linguistics, one of anthropology's four primary subfields. Explores interactions between culture and language in various cultures around the world, including the United States, utilizing anthropology's holistic, cross-culture, and evolutionary perspectives.

252. *Physical Anthropology.* 3 Hr. Fossil evidence for human evolution, racial variation, and relationship between biology and behavior.

255. *Latin American Cultures.* I, II. 3 Hr. Survey of the cultures of Mexico, Central America, and South America. Consideration of historical, social, economic, political, religious, and geographic factors that impact on contemporary life ways.

256. *Traditional and Changing Africa.* 3 Hr. A survey of traditional social institutions found in hunting/collecting, agricultural, and pastoral societies of sub-Saharan Africa. Labor migration, urbanization, agricultural cooperatives, and other consequences of colonial rule will be considered.

257. *The Art of Primitive Peoples.* 3 Hr. The art of prehistoric peoples from the Upper Paleolithic to Urban Phase and the art of contemporary technologically primitive peoples will be described and functionally analyzed within their individual cultural contexts.

258. *Introduction to Archaeology.* 3 Hr. Coreq: SOCA 250. Methods and techniques of reconstructing prehistoric cultures, explaining cultural change, and explaining the formation of the archeological record.

265. *Introduction to GLBT Studies.* 3 Hr. An introduction to gay, lesbian, bisexual and transgender studies that combines the disciplines of anthropology, biology, history, literature, philosophy, psychology, and sociology.

293 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

302. *Deviant Behavior.* 3 Hr. PR: 6 Hr. SOCA or consent. Examination of the processes by which "deviance" is defined in society, and the methods of social control attempted. Provides a critical understanding of society from the perspective of those defined as "outsiders"—criminals, addicts, etc.

304. *Complex Organizations.* 3 Hr. PR: 6 Hr. SOCA or consent. The structure and functioning of large-scale, bureaucratic organizations, including studies of industrial organizations, prisons, hospitals, government.

311. *Social Research Methods.* 3 Hr. PR: Junior status or consent. Logic of social research, elements of research design, and problems of measurement, with emphasis on survey research methodology and data analysis.

322. *Third World Development.* II. 3 Hr. PR: SOCA 222 or SOCA 240 or consent. Provides a macroscopic view of political and social change in the Third World and specific knowledge of Third World development for issues related to population, food, debt, health, education, environment, and human rights.

323. *Sociology of Rural Life.* 3 Hr. PR: SOCA 101 or consent. Social aspects of rural living. Characteristics of rural population, social structure, and institutional arrangements: family, community, education, religion, recreation, health, welfare, and local government.

325. *Illness and Health Care.* 3 Hr. An overview of behavioral factors relating to occurrence of and response to illness, with particular emphasis upon American medicine. Designed especially for students interested in health-related careers.

330. *The Criminal Justice System.* 3 Hr. PR: SOCA 232 or consent. A sociological introduction to the criminal justice system. Focuses on analysis of police work, court activities, and corrections within the context of American social organization and societal definitions of crime and justice.

331. *Sociology of Law.* 3 Hr. PR: SOCA 232 or SOCA 233 or permission of instructor. Development and practice of law as part of social systems; theoretical treatments of the relationship between law and social order; emphasis on issues of class, race, and gender.

332. *Sociology of Education.* 3 Hr. PR: SOCA 101 or consent. Education as a social institution, cultural and class influences on education, social roles and career patterns in the school system, the school, and problems of the community.

333. *Sociology of Work and Work Places.* 3 Hr. PR: SOCA 101 or consent. Explores the significance of work and work relations in contemporary society. Emphasis is given to the analysis of employment settings including industrial organizations.

334. *Corporate and White Collar Crime.* 3 Hr. Examines lawbreaking by respectable organizations and individuals engaged in professional economic activity. Studies sociocultural sources of such crime, consequences for victims, and public policy responses. Includes recent criminal cases, legal changes, and enforcement trends.

336. *Sociology of Religion.* 3 Hr. PR: 6 Hr. SOCA or Consent. Relationship of religion and society. Origin of religious institutions, structure, function, and role in change or stability of the social system.

337. *Sociology of American Business.* 3 Hr. PR: 6 Hr. SOCA or Consent. The changing role of business, and the debate over its social responsibilities are the major issues of the course. Corporate structures, ownership, governance, power, policy, crime, philanthropy, and work life are examined.

339. *Organized Crime.* 3 Hr. PR: 6 Hr. SOCA or Consent. Analyzes organized criminal groups in relation to the social structure, culture, and social psychology of societies. Topics include: history and leadership of crime groups; relations with government, business, and labor; enforcement policies; international crime groups.

345. *Terrorism.* 3 Hr. PR: 6 Hr. SOCA or Consent. A sociological understanding of terrorism, including its causes, relations to social context, and trends. Emphasis is placed on major terrorist groups, selected cases, explanatory theories, and policies of containment and prevention.

353. *Anthropology of Religion.* 3 Hr. PR: 6 Hr. SOCA or Consent. Symbolism, magic, ritual, shamanism, sorcery, and concepts of sin and salvation related to peasant and tribal cosmologies will be examined as causes of and remedies for suffering in traditional and modern contexts.

358. *Anthropology of Health and Illness.* 3 Hr. PR: 6 Hr. SOCA or consent. Health and disease, diagnosis, and healing in cross-cultural perspective; analyses of social, cultural, political, and economic factors in modern and traditional medical systems.

359. *World Prehistory.* 3 Hr. PR: 6 Hr. SOCA or Consent. A survey of prehistoric cultures from the lower paleolithic to the rise of cities in both the old and new worlds.

360. *Women and Men in Society.* 3 Hr. PR: SOCA 101 or WMST 170. Sociological study of gender stratification. Emphasis on social, structural, historical, cultural bases of gender relations. Structured around issues of theoretical debate and research interest concerning U.S. gender system. Includes cross-cultural and international comparisons.

362. *Sociology of Aging.* 3 Hr. PR: 6 Hr. SOCA or Consent. Social forces influencing the experience of aging, and the effects of a growing elderly population on society. Topics include changing roles and status of the elderly, intergenerational relationships, retirement traditions, widowhood.

364. *Youth and Social Change.* 3 Hr. PR: 6 Hr. SOCA or Consent. A structural-historical approach to the study of youth as both product and agent of social change. Emphasizes concepts of human development, life course transition, age stratification, birth cohort, lineage, historical period, and sociocultural generation.

371. *Social and Mental Health Disorders.* PR: 6 Hr. SOCA or Consent. 3 Hr.

389. *Writing in Sociology and Anthroplogy.* 1 Hr. Integration of context with writing about the important topics; must be taken concurrently with and approved "W" content course. (for majors only; permit required.)

401. *Sociological Theory.* 3 Hr. PR: Junior standing or Consent. Systematic analysis of major sociological theories viewed from the historical perspective and in terms of current research.

405. *Introduction to Social Inequality.* 3 Hr. PR: Junior standing or Consent. Sociological study of the ways individuals/groups are differentiated and ranked historically and currently within the U.S. Major systems examined are gender, race, ethnicity, socioeconomic status, sexual orientation, place, age, ability, and religion.

407. *Constructing Social Problems.* 3 Hr. PR: Junior or senior standing or Consent. Focuses on the dynamics of defining social problems, with emphasis on claimsmakers, especially activist groups and mass media. Examines how power influences perceptions, how perceptions affect policies, and how problem definitions relate to social change.

440. *Social Change.* 3 Hr. PR: 6 Hr. SOCA or Consent. Sociological analysis of current major changes in our society, of the forces underlying them, and of tensions to which they give rise. Alternative future directions and rational manipulation and planning for social change.

455. *Anthropological Theory.* 3 Hr. PR: 6 Hr. SOCA or Consent. Theoretical landmarks in early and modern anthropology. Includes British functionalism, psychological anthropology, French structuralism, and twentieth-century evolutionism in the United States.

456. *Field Methods.* 3 Hr. PR: SOCA 311 or Consent. The distinctive craft of data gathering in cultural anthropology. Development of skills in field methods and participant observation.

461. *Issues in Crime and Justice.* 3 Hr. PR: Junior standing, or Consent. Senior seminar on crime and social organization of justice. Focus on problems of prevention, enforcement, corections, and institutional reform. Emphasis on recent research, emerging trends, and policy.

463. *Economy and Society.* PR: 6 Hr. SOCA or Consent. 3 Hr. Examines the role that the economy as a social institution plays in the historical paradigms in sociology and modern social theory, as well as in organization and inequality models in sociology.

488. *The Capstone Experience.* 1 Hr. PR: SOCA 101 and SOCA 105 and senior standing. CoReq: Enroll simultaneously in one of the approved capstone experience. An undergraduate course designed to facilitate the completion of the capstone experience. (Grading will be Pass/Fail.)

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491 A-Z. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495 A-Z. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

Spanish (SPAN)

100. *Intensive Elementary Spanish.* 6 Hr. PR: Score of F1 on placement test or no prior study of the language or departmental consent. Equivalent of SPAN 101 and 102 combined into one course.

101. *Elementary Spanish 1.* 3 Hr. PR: Score of S1 on placement test or no prior study of the language or departmental consent. Introduction to the sound and writing systems of the language with emphasis on listening, speaking, reading, and writing within an authentic cultural context. (Course presumes no prior knowledge of the language.)

102. *Elementary Spanish 2.* 3 Hr. PR: SPAN 101 or score of S2 on placement exam. Continuation of SPAN 101. Introduction to the sound and writing systems of the language with emphasis on listening, speaking, reading, and writing within an authentic cultural context.

200. *Intensive Intermediate Spanish.* 6 Hr. PR: SPAN 102 or SPAN 100 or consent. The equivalent of SPAN 203 and 204 combined into one course.

203. *Intermediate Spanish 1.* 3 Hr. PR: SPAN 102 or score of S3 on placement exam. Continuation of SPAN 102.

204. *Intermediate Spanish 2.* 3 Hr. PR: SPAN 203 or score of S4 on placement exam. Foundation for advanced study of Spanish. Emphasis on oral and written communication.

293 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly courses.

301. *Spanish Conversation.* 3 Hr. PR: SPAN 204. Major emphasis on improving conversational skills by means of discussions and oral reports. Grammar review where appropriate and written work.

302. *Reading and Composition.* 3 Hr. PR: SPAN 204. Major emphasis on reading development and writing skills. Grammar review where appropriate. Class discussion in Spanish.

303. *Advanced Grammar.* 3 Hr. PR: SPAN 204. A study of major points of Spanish grammar with particular attention to more advanced structures. Class discussion, readings, and composition in Spanish.

304. *Advanced Reading and Composition.* 3 Hr. PR: SPAN 302. Study of different genres and styles. Class discussion and written analyses in Spanish.

330. *Latin American Culture.* 3 Hr. PR: SPAN 302 Survey of Latin American civilization and culture from the pre-Colombian period to the present.

331. *Early Spanish American Literature.* 3 Hr. PR: SPAN 304. Readings in Spanish American literature from the colonial period to Modernism.

332. *Modern Spanish American Literature.* 3 Hr. PR: SPAN 304. Readings in Spanish American literature from Modernism to the present.

340. *Culture of Spain.* 3 Hr. PR: SPAN 302. Survey of Spanish civilization and culture from its origins to the present day.

341. *Early Literature of Spain.* 3 Hr. PR: SPAN 304. Readings in Spanish literature from the medieval period to the eighteenth century.

342. *Modern Literature of Spain.* 3 Hr. PR: SPAN 304. Readings in Spanish literature from the eighteenth century to the present.

401. *Grammar Review.* 3 Hr. Intensive grammar review for graduate students. (Credit does not count toward the 36 hrs. required for master's degree.)

431. *Caribbean Literature.* 3 Hr. PR: At least one literature course in Spanish. Readings of selected works by Hispanic writers from the Caribbean region.

461. *Commercial Spanish 1.* 3 Hr. PR: 12 Hr. upper-division Spanish or consent. Development of advanced speaking, reading, and writing skills appropriate for business contexts within the Spanish-speaking world.

462. *Commercial Spanish 2.* 3 Hr. PR: SPAN 461 Continuation of SPAN 461

480. *Issues in the Hispanic World.* 3 Hr. PR: Completion of 21 upper-division hours in Spanish. An examination of contemporary issues facing the Hispanic world, with particular attention given to cultural developments and influences.

481. *Hispanic Presence in the World.* 3 Hr. Completion of 21 upper-division hours in Spanish. This course is designed to provide Spanish majors with a capstone experience and offers them a more comprehensive view of the role of Spanish in the world.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492. *Directed Study.* 1-6 Hr. Directed study, reading, and/or research.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR. Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Special Education (SPED)

302. *Special Education Assessment.* 3 hr. Development of expertise in various forms of cognitive and effective assessment techniques, understanding psychoeducational needs of exceptional learners, and designing appropriate educational prescriptions from assessment protocols.

350. *Survey of Exceptional Children and Adults.* 3 Hr. PR: Consent. Introduction to all areas of exceptionality. Definition, psychological and educational characteristics, and social and vocational adjustment.

355. *Introduction to Mental Retardation.* 3 Hr. PR: Consent. Historical, etiological, social, educational, and vocational aspects of mental retardation.

360. *Curriculum and Methods for Special Education.* 3 Hr. PR: SPED 350 and SPED 355 or consent. Organization of instruction, adaptation of teaching methods in several curricula areas, and construction of materials.

362. *Educating Students with Mild/Moderate MR.* 3 Hr. PR: SPED 350 and SPED 360. Curriculum development based upon individual needs; application of classroom instructional methods for students with mental retardation.

363. *Characteristics of Students with Learning Disabilities/Behavior Disorders.* 3 Hr. Historical trends in the education of students with learning disabilities and behavior disorders. Educational and management techniques for the future.

364. *Educating Students With Learning Problems.* 3 Hr. Curriculum planning, informal diagnosis techniques, teaching strategies, and opportunities to use strategies in student designed programs.

381 A-Z. *Special Problems and Workshop in Special Education.* 2-4 Hr. PR: Consent. To take care of credits for special workshops and short intensive unit course on methods, supervision, and other special topics.

Speech Pathology and Audiology (SPA)

(Due to college curriculum review, actual course sequence and offering may differ from catalog listings. Please see program advisor.)

170. *Speaking to Communities.* I, II. 3 Hr. Focuses on guided direction to improve the student's conversational and public speaking skills through a variety of presentational formats to external audiences via community outreach. Code switching among dialects will be introduced and discussed.

199. *Orientation to Speech Pathology and Audiology.* 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities. Open to all students (including those considering SPA as a major) and required for SPA majors. (Course will be graded Pass/Fail.)

200. *Introduction to Speech and Hearing.* I, II. 3 Hr. (For majors only.) Introduction to the professions of speech-language pathology and audiology; normal speech, language, and hearing processes; etiology, assessment and treatment of communication disorders.

270. *Effective Public Speaking.* I, II. 3 Hr. Designed for improvement of the student's speech based upon theory and demonstrated performance of voice and diction skills and public-speaking skills for effective communication in a variety of speaking situations.

274. *Manual Communication.* I, II. 3 Hr. PR: Consent. Development of skills needed to communicate in sign language. The manual alphabet, basic number concepts, and the basic vocabulary of traditional American signs.

276. *Intermed Manual Communication.* II. 3 Hr. PR: SPA 274 or consent. Improve skills needed to communicate in sign language. Includes increasing sign language vocabulary, practicing finger spelling, and communicating with signs.

278. *Communication Disorders.* I, II, S. 3 Hr. (For non-majors.) Survey of normal processes and disorders of speech, language, and hearing in children and adults. Intended for students and teachers in early childhood, elementary, secondary and special education; language arts specialists; child development specialists; psychologists; and rehabilitation specialists.

293. *Special Topics.* I, II, S. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

320. *Speech Science.* I. 4 Hr. PR: SPA 200 or consent. Detailed discussion of the speech production process, including acoustic, anatomical, and physiological aspects of speech production.

322. *Phonetics.* II. 3 Hr. PR: SPA 200 or consent. Standard speech sounds of the English language. Use of phonetic symbols for recording speech sounds. Classification systems presented.

324. *Language Acquisition.* II. 3 Hr. PR: SPA 320 and SPA 322. Normal processes involved in the acquisition of language, including the development of phonological, semantic, morphological, pragmatic, and syntactical systems. Application of these processes to the diagnosis and treatment of language disorders.

326. *Articulation and Cleft Palate.* II. 3 Hr. PR: SPA 322 Characteristics and etiology of articulatory and phonological disorders; survey of diagnostic and therapeutic procedures. Characteristics of articulation and resonance, and survey of evaluation and treatment considerations for cleft palate.

340. *Hearing Science.* II. 4 Hr. PR: SPA 320. Detailed discussion of auditory processing in the speech perception process, including acoustic, anatomical, and psysiological aspects of speech perception.

342. *Hearing Screening Programs.* I. PR: SPA 200 or consent. 3 Hr. Disorders of hearing; screening programs from birth through geriatrics; introduction to industrial programs.

362. *Parent Programs Communication Disorders.* II. 3 Hr. PR: ENGL 101 and ENGL 102 and SPA 200 or consent. For majors only. Students will learn to organize and implement parent involvement programs in a variety of settings, interview parents, conduct conferences, utilize appropriate materials, and interact effectively with parents of children with communication disorders in various clinical settings.

390. *Clinical Observation/SLP.* I, II. 1 Hr. PR: SPA 200 or consent. Introduction to clinical procedures and issues in speech-language pathology, including professional ethics, certification requirements, assessment/treatment process variables, clinical observations, behavioral objectives, cues, and feedback. (Grading will be Pass/Fail.)

391. *Clinical Observation/Audiology.* I, II. 1 Hr. PR: SPA 200 or consent. Introduction to clinical procedures and issues, including professional ethics, certification requirements, assessment/treatment process variables, clinical observations, behavioral objectives, cues, and feedback. (Grading will be Pass/Fail.)

420. *Exploring SPA Clinical Settings.* 3 Hr. PR: SPA 324 and SPA 326. Overview of governmental regulations, ethical considerations, relevant technology, and administrative/programmatic matters germane to the clinical practice of speech-language pathology and audiology in various settings including schools, medical and rehabilitation facilities, and private practice.

422. *Voice and Stuttering.* II. 3 Hr. PR: SPA 200 and SPA 326. Basic knowledge about and understanding of voice disorders and stuttering; relevant theories, facts, research findings, and clinical practice related to the epidemiology, etiology, course, prevention, diagnosis, and remediation.

424. *Language Disorders.* II. 3 Hr. PR: SPA 324. The nature and etiology of child and adult language disorders are described. Assessment and remediation procedures are examined.

440. *Audiological Assessment.* I. 4 Hr. PR: SPA 340 and SPA 342. Application of basic audiological techniques, including puretone and speech audiometry, masking, and immittance testing. Audiometric skill development in computer simulation lab.

442. *Aural Rehabilitation.* II. 3 Hr. PR: SPA 440 or consent. Communication and hearing impairment; aural rehabilitation evaluation; remediation including amplification, auditory and visual training, and ALD's.

460. *Professional Writing/Speaking.* I. 3 Hr. (For majors only.) PR: (ENGL 101 and ENGL 102 and SPA 270) or consent. Designed for improvement of students' professional skills, specifically oral and written. Emphasis is placed on report writing, letter writing, resume writing, listening, interviewing, group problem solving, leadership, persuasion, and public speaking.

482. *Clinical Practice/SLP.* I, II, S. 3 Hr. PR: Consent. Orientation to clinical methods for evaluation and treatment of speech-language disorders. (Grading will be Pass/Fail.)

483. *Clinical Practice/Audiology.* I, II, S. 3 Hr. PR: Consent. Orientation to clinical methods for evaluation and treatment of hearing disorders. (Grading will be Pass/Fail.)

484. *Clinical Study and Application 1.* 1 Hr. PR: All required courses through junior year. SPA seniors will meet in weekly seminars and with a faculty mentor to explore, develop, and write a clinically-oriented research paper and corresponding annotated bibliography that contains a minimum of twenty relevant sources.

485. *Clinical Study and Application 2.* 1 Hr. PR: SPA 484. SPA seniors will meet in weekly seminars and with a faculty mentor to develop and orally present, with a visual aid, the clinically-oriented research paper developed in SPA 484.

493 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

495. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

Sport Studies (SS)

167. *Introduction to Sport Studies.* 3 Hr. Examines the historical and philosophical bases, major issues, and professional practices in sport studies.

170. *Champs/Life Skill.* 1 Hr. This course is intended for first-year student athletes interested in developing and incorporating life skills in the areas of academics, athletics, career, and personal development.

210. *Professional Issues.* 1 Hr. An introduction to professional issues relevant to the fields of sport psychology. Provides opportunities for students to gain practical experiences within the field.

271. *Sport in American Society.* 3 Hr. Sociocultural investigation of sport in American society.

272. *Psychological Perspectives of Sport.* 3 Hr. An examination of personality and behavioral factors as they affect participation in sport. Topics such as stress and sport, body image, aggression and the sport participant, and the licensure of sport psychologists highlight the course.

293. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

370. *Sport Finance.* 3 Hr. This course will present a number of basic concepts in the budgeting and financing of sports programs and will also examine a number of critical financial issues affecting sports. Particular emphasis will be placed on intercollegiate athletic programs.

373. *African Americans in Sports.* 3 Hr. Sociocultural and historical overview of the contributions of African-Americans in sport in America.

374. *Sport Studies Research Methods.* 3 Hr. An analysis of descriptive and experimental research in sport psychology and sport management. Course requirements include completion of capstone research project.

380. *History and Philosophy of Sport.* 3 Hr. This course is designed to acquaint students with philosophical issues related to sport and sport management and with individuals and events that helped shape the history of sport.

383. *Exercise Psychology.* 3 Hr. Introduction to motivational and mental health factors associated with exercise participation.

385. *Social Psychology of Sport.* 3 Hr. PR: SS 271 and SS 272 or Consent. An introduction to the study of how and why performance is affected by interactions with others in sport.

425. *Facility Planning.* 3 Hr. PR: Consent. An in-depth study of sport facilities, including planning, design, liability, and facility management concepts and evaluation.

426. *Liability in Sport.* 3 Hr. An overview of the legal system as it applies to sport, including contracts, tort law, drug testing, rights of athletes, product liability, legal duties of coaches, facilities supervisors, and athletic directors.

485. *Sport Management.* 3 Hr. PR: Senior standing. The study of management principles as they relate to sport organizations. The analysis includes specific references to planning, organizing, leading, and evaluating functions of management in sport.

486. *Sport Marketing.* 3 Hr. PR: Senior standing. The study of marketing principles as they relate to sport organizations. Specific attention is focused on the marketing planning process, marketing information systems, and internal marketing.

487. *Issues in Sports Studies.* 3 Hr. PR: SS 271 and ENGL 101 and ENGL 102 and Junior standing. An in-depth analysis of critical issues impacting sport and the sport industry.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491 A-Z. *Professional Field Experience.* 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492. *Directed Study.* 1-6 Hr. Directed study, reading, and/or research.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

Statistics (STAT)

111. *Understanding Statistics.* I, II. 3 Hr. Introduction to basic concepts and ideas of statistics. Methodologies and case studies to prepare students to understand the use of statistics in the mass media and professional publications in their major field of study. Not open to students who have earned credit for STAT 211 or STAT 215.

205. *Introductory Probability and Statistical Inference.* I. 3 Hr. PR: MATH 150 or equivalent. Probability, random variables, expectation, random sampling, descriptive statistics, sampling distributions, estimation, hypothesis testing, linear regression, and nonparametric statistics.

211. *Elementary Statistical Inference.* I, II, S. 3 Hr. PR: MATH 124 or MATH 126. (Not open to students who have completed STAT 215.) Basic concepts of descriptive and inferential statistics: descriptive measures, random variables, sampling distributions, estimation, tests of hypotheses, chi-square tests, regression, and correlation. (Equivalent to ECON 225.)

215. *Introduction to Probability and Statistics.* I, II, S. 3 Hr. PR: MATH 156. Probability, random variables, discrete and continuous probability distributions, joint probability distributions, and expected value. The central limit theorem. Point and interval estimation and tests of hypotheses. Chi-square tests, linear regression, and correlation.

217. *Industrial Statistics.* II, 3 Hr. PR: STAT 215 or equivalent. Statistical methods for solving industrial problems including statistical quality and process control, reliability modeling, sequential analysis, and time series analysis. Methodology for these problems will utilize a statistical software program.

222. *Numerical and Symbolic Methods in Mathematics and Statistics.* I. 3 Hr. PR: MATH 156. Data manipulation, data visualization in two and three dimensions including animation, and scientific programming using a high-level language, symbolic manipulators, and other packages. Applications to problems in mathematics and statistics. (Equivalent to MATH 222.)

293. *Special Topics.* 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

312. *Intermediate Statistical Methods.* I, II. 3 Hr. PR: STAT 211 or STAT 215 or equivalent. Extension of basic concepts of statistical inference: estimation and hypothesis testing for more than two populations, multiple regression and correlation, curvilinear regression, analysis of variance and covariance.

313. *Introductory Design and Analysis.* II. 3 Hr. PR: STAT 312. Introduction to the linear model, the complete and fractional factorial experiment, and the completely random, randomized complete block, Latin square, and split-plot experimental designs.

316. *Forensic Statistics.* I. 3 Hr. PR: STAT 215. Probabilistic and statistical evaluation of evidence in forensic science: concepts of uncertainty/variation, discriminating power, coincidence/significance probabilities, historical overview, transfer evidence, DNA profiling, fingerprint identification, biometric identification, and selected forensic statistics topics/case studies.

331. *Sampling Methods.* I. 3 Hr. PR: STAT 211 or 215 or equivalent. Methods of sampling from finite populations, choice of sampling unit and sample survey design. Estimation of confidence limits and optimum sample size. Single and multi-stage sampling procedures.

421. *Statistical Analysis System (SAS).* I. 3 Hr. PR: (STAT 211 or STAT 215 or equivalent) and (CS 110 or equivalent). Introduction to the use of the Statistical Analysis System (SAS), a statistical computer program. Students will perform statistical data analysis, data file modifications, and statistical report writing.

445. *Data Analysis.* I. 3 Hr. PR: STAT 312 or equivalent. Computer analyses of simulated or real unbalanced data using a matrix approach to linear models. The techniques will include least squares analysis of variance and covariance, multiple and polynomial regression, and multiple discrimination.

461. *Theory of Probability.* I. 3 Hr. PR: MATH 251. Theoretical coverage of probability, random variables, discrete and continuous probability distributions. Expected value, moment generating functions, special probability distributions. Random sampling and distributions of certain functions of random variables. The Central Limit Theorem.

462. *Theory of Statistics.* II. 3 Hr. PR: STAT 461. Theoretical introduction to statistical inference. Properties of estimators and techniques of estimation. Hypotheses testing including the Neyman-Pearson Lemma and likelihood ratio tests. Regression and correlation. Selected topics.

482. *Statistics Practicum.* I. 1 Hr. PR: STAT 313. A capstone experience core course. Students are expected to: research and design (optionally) a study, do independent statistical analyses of a data set, and present the results in both verbal and written forms.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-15 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Textiles, Apparel, and Merchandising (TA&M)

120. *Textile and Apparel Complex.* I. 3 Hr. Textile and apparel industries will be described and analyzed, in order, from concept to consumer purchase on four levels: primary (raw materials), secondary (design/manufacturing), tertiary (retail), and auxiliary (service/advisory).

140. *Introductory Textiles.* I, II. 3 Hr. Study of fibers, yarns, fabrics, methods of color application, and fabric finishing agents and processes; examination of yarns and fabrics.

220. *Social-Psychological Aspects of Dress.* I. 3 Hr. PR: TA&M 120 and (SOCA 101 or SOCA 105) and PSYC 231. Interdisciplinary approach to the study of apparel including cultural, historical, social, psychological, physical, economic, and aesthetic factors and their significance to individuals and society.

221. *Visual Merchandising.* II. 3 Hr. PR: TA&M 140 and TA&M 220. Visual merchandising including display and store design; on-site store analysis and development of design proposals by student teams.

230. *Apparel Construction and Fitting.* I. 3 Hr. PR: (MATH 124 or MATH 126 or MATH 129) and TA&M 140 and sophomore standing. Majors only. Basic principles of apparel construction, pattern alteration, and fitting used in the apparel industry.

231. *History of Costume.* II. 3 Hr. PR: TA&M 140 and TA&M 220. History of costume from the ancient civilizations to the present in relation to technological, social, cultural, and economic influences.

240. *Textiles for Interiors.* II. 3 Hr. PR: TA&M 140. Study of textile products for commercial and residential interiors. Production techniques, construction variables, and quality factors affecting service ability are emphasized. Federal legislation governing labeling, mandates concerning safety, and marketing strategies influencing selection are included.

320. *Merchandise Buying and Management 1.* I, II. 3 Hr. PR or Conc: TA&M 230 and TA&M 231. This course serves an introduction to the role and responsibilities of the buyer in relation to merchandise planning and control. Sourcing, negotiation strategies, and current merchandising practices are explored via the case study method.

321. *Merchandising Study Tour.* II. 1 Hr. PR: Junior standing in TA&M. Study of textile, apparel and retail industries through visits to historic costume collections, apparel firms, design showrooms, buying offices, and retail establishments. (May be repeated for a maximum of 2 hr. credit.)

332. *Flat Pattern Design.* II. 3 Hr. PR: TA&M 230 or Consent. Creative expression through pattern design is studied using the flat pattern method. Apparel designed and constructed. (May be repeated for a maximum of 6 hr. credit.)

340. *Textiles and Apparel in the Global Economy.* 3 Hr. PR: TA&M 140. Explores economics, political, and social dimensions of the international production and trade of textiles and apparel. Emphasis on U.S. textile and apparel complex within an international perspective. (Even years.)

420. *Merchandise Buying and Management 2.* I. 3 Hr. PR: TA&M 320 or Consent. Senior standing. Study of merchandising activities performed on the retail level including planning sales and assortments, selecting merchandise for resale, controlling inventories, and determining profit. Basic mathematical formulas involved in merchandising are practiced.

424. *Functional Apparel.* I. 3 Hr. PR: ENGL 101 and ENGL 102 and TA&M 220 and TA&M 230. Physical, sociological, and psychological clothing needs of individuals with functional needs. Historical developments and research needs explored. Students conduct a service-learning project.

433. *Apparel Design and Illustration.* II. 3 Hr. PR: TA&M 230 and TA&M 231 and TA&M 332 or Consent. Techniques of drawing fashion models and various media for apparel design presentation. Sources of design inspiration examined for developing original apparel designs. (May be repeated for a maximum of 6 hr. credit.)

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Merchandising Internship.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Theatre (THET)

101. *Introduction to the Theatre.* I, II, S. 3 Hr. (Open to all students.) A survey of the nature and function, the arts and crafts, and major phases in the historical development of the theatre.

102. *Acting.* I, II. 3 Hr. (Open to all students.) Basic theories and concepts in stage acting for the beginning student. Emphasis on the physical, intellectual, emotional, and personality languages of acting.

103. *Oral Interpretation.* I, II. 3 Hr. (Open to all students.) Development of mental and emotional responsiveness to written materials. Techniques of communicating through oral reading.

110. *Stagecraft 1.* I, II. 4 Hr. Fundamentals of scenery construction and technical theatre through formal lecture and practical crew experience. Requirements include assignments on scenic construction and running crews for Division productions.

111. *Costuming.* I, II. 4 Hr. Introduction to stage costuming through lecture and practical experience. Emphasis on the application of basic sewing skills and processes used in costume construction. Laboratory requirements include assignments on crews for Division productions.

112. *Orientation to the Theatre.* I. 3 Hr. PR: Theatre majors or minors only. An examination of basic theatre concepts and the roles of practitioners in the production process and an analysis of scripts in light of major theoretical and critical movements.

113. *Stage Management Principles.* I. 1 Hr. PR: THET 112 An examination of the fundamental principles that govern the contemporary stage manager.

143. *Freshman Directing Workshop.* I, II. 1 Hr. Exploration of the collabaorative relationship between actor and director from the actor's point of view.

144. *Fundamentals of Acting.* I. 3 Hr. PR: Theatre major. An introduction to the fundamental techniques of acting with a focus on ensemble building, action, imagination, concentration of attention, and objectives. Course projects include structured improvisations and exercises leading to beginning scene study in Realism.

145. *Fundamentals of Acting.* II. 3 Hr. PR: THET 144. Continuation of THET 144.

170. *World Theatre and Drama.* I. 3 Hr. Introduction to theatre and drama traditions in ten world cultures. An intercultural study of theaters, performance and staging practices, the cultural milieu, and dramatic literature.

201. *Theatre Management.* 3 Hr.

213. *Stage Management Practicum.* I, II. 2 Hr. PR or Conc: THET 112 and THET 113. Practical production experience as stage manager. May be repeated for a max. of 4 hrs.

220. *Fundamentals of Lighting.* I, II. 3 Hr. PR: THET 110 and THET 111. Fundamentals of stage lighting through formal lecture and practical experience. Laboratory requirements include assignments on the lighting/electrics crews for Division productions.

221. *Theatre Makeup.* I, II. 3 Hr. Lecture-laboratory course in art of stage makeup. Practical makeup for the University theatre productions.

222. *Sceno-Graphic Techniques.* I. 3 Hr. PR: THET 110. Techniques in drafting in accordance with current graphic standards for stage design and technology. Introduction and refinement of technique and graphic style through projects and exercises.

225. *Introduction to Stage Design 1.* 3 Hr. PR: THET 110 and THET 111. Study elements/principles of two/three dimensional design and application to scenery, lighting, and costume design. Emphasis on creative analysis and communication using techniques in drawing, painting, and model making.

226. *Introduction to Stage Design 2.* 3 Hr. PR: THET 225. Experience applying elements/principles of two/three dimensional design to study of scenery, lighting, and costume design. Studio course focusing on color theory, painting, and finishing techniques in model making.

230. *Text Analysis.* 3 Hr. For the student theatre practitioner in acting, design, directing, and stage management. Explorations include: anchoring techniques, concept of "pressures," and the parameters of a dramatic event.

231. *Advanced Text Analysis.* 3 Hr. PR: THET 230. For the student practitioner in the Studio Acting Program only exploring, in more depth, and with new challenging texts, analysis techniques of THET 230 but with total focus on performing the text.

240. *Fundamental Vocal Techniques.* I. 2 Hr. PR: Majors only. Developing the expressive voice. Understanding the anatomy and physiology of the voice, breath and resonance. Release of physical blocks.

241. *Fundamental Vocal Techniques.* II. 2 Hr. PR: THET 240. Continuation of THET 240.

242. *Fundamentals of Movement.* I. 3 Hr. PR: Consent. An investigation into the fundamentals of human movement, and issues of movement in performance. Exercises concentrate on the development of spatial and self-awareness, ensemble skills, and group problem solving.

243. *Fundamentals of Stage Movement.* II. 2 Hr. PR: THET 242. Continuation of THET 242.

244. *Intermediate Acting.* I. 3 Hr. PR: THET 144. Continued exploration of acting techniques including exercise work in objectives, beats, actions, personalization, environment improvisation, monologue, and scene study work.

245. *Intermediate Acting.* II. 3 Hr. PR: THET 244. Continuation of THET 244.

293 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

302. *Directing.* I, II. 3 Hr. Fundamental theory and practice of directing for live theatre with emphasis on script analysis, director-actor communication, groundplan, and composition.

314. *Theatre Production and Design.* 3 Hr. Production and design fundamentals for the performing arts including conceptualization, fabrication and maintenance of scenery, costumes, lighting, and sound. Includes introduction to stage design and its translation into realized production.

321. *Stage Properties.* 3 Hr. PR: THET 110 and THET 111. Techniques and methods for designing and fabricating stage properties for theatrical production. Practical experience in the construction of properties as class projects and/or for productions.

322. *Scene Design.* I. 3 Hr. PR: THET 222 and THET 225. Introduction to the fundamentals of scenic design including conceptualization, development, drafting, rendering, model building, and techniques of design presentation.

323. *Advanced Scene Design.* I, II. 3 Hr. PR: THET 322. Advanced study of scenic design with an emphasis on conceptualization, rendering, model building, and alternative forms of design presentation for the performing arts. (May be repeated for a max. of 9 credit hours.)

324. *Costume Design 1.* I. 3 Hr. PR: THET 226. Study of basic design elements as applied to costume design. Script analysis leading to conceptualization and communication through visual language. Experience in practical organization skills, paperwork, and budgeting.

325. *Lighting Design.* I, II. 3 Hr. PR: THET 220. Experience in the design of stage lighting including conceptualization, drafting, and rendering techniques related to the development and presentation of lighting design. (May be repeated for a max. 9 credit hours.)

326. *Costume Design 2.* 3 Hr. PR: THET 324. Experience applying the basic principles of costume design to text, movement text, opera, dance, and puppetry. Emphasis on rendering techniques, presentation, composition, and fabric selections. (May be repeated for a max. of 6 credit hours.)

327. *History of Costume & Decor 1.* 3 Hr. PR: THET 225 and THET 226. A historical survey of clothing, artistic style, and decoration from ancient Egypt to 1750. Emphasis on how stage designers employ style in the design of costumes, scenery, and properties. Field trip required.

328. *History of Costume & Decor 2.* II. 3 Hr. PR: THET 225 and THET 226. A historical survey of clothing, artistic style, and decoration from 1750 to the present. Emphasis on how stage designers employ style in the design of costumes, scenery, and properties. Field trip required.

329. *CAD for the Stage.* I, II. 3 Hr. PR: THET 222. Study of the graphic applications of computer assisted design and drafting for stage design through project work and exercises in a studio format.

340. *Intermediate Vocal Techniques 1.* I. 2 Hr. PR: THET 240 and Consent. Extending vocal range, power, and flexibility. Achieving personal connection between words and self. Formation of speech sounds.

341. *Intermediate Vocal Techniques 2.* II. 2 Hr. PR: THET 340 and Consent. Developing of flexibility and muscularity of the voice. Phonetics.

342. *Stage Movement 1.* 2 Hr. PR: THET 242 and Consent. Continuation of THET 242. Workshop in movement skills related to the actor's craft, including the analysis, description, and execution of a broad range of movement qualities.

343. *Stage Movement 2.* 1 Hr. PR: THET 342 or Consent. Continuation of THET 342 through work on directed projects; special topics in issues related to physicality in performance.

344. *Acting Studio.* I. 3 Hr. PR: THET 244 or Consent. The purpose of studio is to reexamine basic acting principles and introduce advanced techniques in characterization, personalization, and given circumstances through exercises, monologue work, and intensive scene study coordinated with rehearsal and performance in THET 345.

345. *Acting Studio.* II. 3 Hr. PR: Consent. Continuation of THET 344. Applied application of intermediate work in personalization, given circumstances, action, and objectives. Includes rehearsal and performance of play from the Modern Contemporary Theatre.

346. *Actor's Craft.* II. 3 Hr. PR: THET 244. Gives the general theatre student a studio style acting class experience, emphasizing exercises and monologue and scene work in a variety of styles.

347. *Physical Acting.* 2 Hr. A practical survey of physical approaches to acting and their relevance to a contemporary actor's craft.

350. *Theatre Dance 1.* 2 Hr.

351. *Theatre Dance 2.* 2 Hr.

352. *Musical Theatre Repertory.* 2 Hr.

353. *Musical Theatre Literature.* 3 Hr.

360. *Theatre in the Modern World.* I, II, S. 3 Hr. (May be repeated for a maximum of 6 hr.) Intensive study of the work of a playwright, a group of playwrights, or a theatrical movement of the twentieth century; particular emphasis on relationship of course materials to twentieth century values and society.

361. *Classic Theatre to 1650.* I. 3 Hr. PR: THET 112. A survey of theatre history, with emphasis on the development of performance conditions, from classical antiquity through the middle of the seventeenth century.

362. *Euro-American Theatre: 1650-1850.* II. 3 Hr. PR: THET 112. A survey of theatre history, with emphasis on the development of performance conditions, from the middle of the seventeenth century through the rise of realism in the 1840's.

363. *Modern and Contemporary Theatre.* II. 3 Hr. PR: THET 112. A survey of theatre history, with emphasis on the development or performance conditions, from the late nineteenth century to the present.

400. *Theatre Performance and Rehearsal Laboratory.* I, II. 1 Hr. PR: Theatre major and Consent. Participation in assigned theatre projects. Appreciation of creativity and performance techniques in theatre. (May be repeated for max. 9 credit hours.)

402. *Repertory Theatre.* 1-6 Hr. PR: Consent. Rehearsal and performance techniques for producing plays in rotating repertory. Emphasis is on the creation of synthesized company of performers, designers, and technicians. (May be repeated for max. 12 credit hours.)

403. *Advanced Directing.* II. 3 Hr. PR: THET 302 and THET 427 or Consent. Emphasis on the work of the director as an integrating artist. High level of proficiency in the direction of a one-act play is required of all students enrolled.

404. *Playwriting.* I, II. 3 Hr. PR: Consent. Development of basic playwriting techniques. Specific assignments explore characterization, dramatic event, dialogue, tension, compression. Emphasis on the student finding one's own voice, style, and courage to dramatize one's view of the world.

405. *Advanced Playwriting.* II. 3 Hr. PR: THET 404. Further exploration of dramatic technique, with emphasis on orchestrating the longer play. Also touches on script analysis of known dramatic texts and on practical problems of a playwriting career.

423. *Costume Crafts.* II. 3 Hr. PR: THET 111 and THET 425. Identification and application of the materials and techniques used in the fabrication of costume crafts. Emphasis on research and practical experience through hands-on project work.

424. *Advanced Technical Production.* II. 3 Hr. PR: THET 110. Study of advanced technical procedures including rigging, welding, new materials, and special effects. Emphasis on the practices and development of skills through projects.

425. *Advanced Costume Construction.* I, II. 3 Hr. PR: THET 111. Study and practical application of costume construction techniques through development of flat-pattern/drafting skills. Emphasis on use of research to interpret the costume rendering. Extensive hands-on experience with construction projects for Division productions. (May be repeated for a max. 6 credit hours.)

426. *Stagecraft 2.* II. 3 Hr. PR: THET 111 and THET 222. Detailed study of scenery construction and technical theatre. Emphasis on research projects, advanced scenographics, and problem-solving techniques. Practical experience through work on productions.

427. *Stage Lighting Theory.* I. 3 Hr. PR: THET 220. Theory of stage lighting design through lecture/project work. Emphasis on use of photometric data, production of shop orders, computer-aided paperwork and hand-drafted light plots. Practical work on Division productions.

428. *Scene Painting.* II. 3 Hr. PR: THET 322 and THET 622 or Consent. An introduction to the basic tools, materials, and techniques of scene painting for the stage.

429. *Sound Seminar.* II. 3 Hr. An exploration of sound design for the theatre with practical emphasis on producing and recording sound effects.

440. *Advanced Vocal Techniques.* I. 2 Hr. PR: Consent. Meeting the demands of heightened texts requiring greater emotional and physical commitments. Tutorials.

441. *Advanced Vocal Techniques 2.* II. 2 Hr. PR: THET 440 and Consent. Integrating vocal techniques in the context of rehearsal and performance in plays of heightened text and issues of period and style.

442. *Advanced Stage Movement 1.* I. 2 Hr. PR: THET 343 or Consent. Practical application of issues of performance theory and composition. Studies in the relationship of text and movement in performance, and in the development of original performance material that uses movement as a point of departure.

443. *Advanced Stage Movement 2.* II. 1 Hr. PR: THET 442. Continuation of THET 442 through work directed projects; special topics in issues related to physicality in performance.

444. *Advanced Acting Studio.* I. 3 Hr. PR: Consent. Continuation of advanced exercises focusing on the works of Shakespeare. Includes verse scansion, text analysis, dynamics, scene study, exercise work, and characterization.

445. *Advanced Acting Studio.* II. 3 Hr. PR: Consent. Continuation of THET 444. Rehearsal and presentation of style project, (Shakespeare, Comedy of Manners, Shaw, etc.). Also includes seminars in special topics in performance.

446. *Studio Scene Study 1.* 1 Hr. PR: THET 244. The presentation of scenes chosen from modern and contemporary theatre, before a panel of acting, voice, and movement faculty for critique.

447. *Studio Scene Study 2.* 1 Hr. PR: THET 444. The presentation of scenes chosen from Shakespeare and other plays of heightened text, before a panel of acting, voice, and movement faculty for critique.

461. *Creative Dramatics.* I, II, S. 3 Hr. PR: THET 144. Study and practice of creative drama for theatre education or classroom/curriculum use. Instructional methods for drama techniques and practical activities are stressed.

462. *Puppetry.* I, II. 3 Hr. Comprehensive study of puppetry as a theatrical form. Construction, manipulation, and production methods for adult and youth audiences are highlighted.

463. *Puppetry for Educators.* I, 3 Hr. PR: Consent. Study of the use of puppetry in the classroom and other educational settings; construction, manipulation , scripting, story-telling ideas to use with children. Curricular issues will be covered.

464. *Children's Theatre.* II. 3 Hr. PR: Consent. Study of theatre for child ausiences. Writing, acting, designing, directing, and producing plays with detailed analysis of scripts and children as audience members. Field trip required.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492 A-Z. *Directed Study.* I, II. 1-12 Hr. PR: Consent. (May be repeated for a maximum of 12 credit hours.) Studies in theatre history, performance, stage design and technology, and theatre crafts. Subject matter and number of sections varies from semester to semester.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* I, II, S. 1-3 Hr PR: Consent.

497. *Research.* I, II. 1-15 Hr. Independent research projects.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

Veterinary Sciences (VETS)

302. *Animal Pathology.* II. 3 Hr. PR: ANPH 301 or Consent. Diseases of farm animals with special emphasis on their cause, prevention, and control.

405. *Parasitology.* II. 3 Hr. PR: (BIOL 101 and BIOL 102 and BIOL 103 and BIOL 104) or (BIOL 115 and BIOL 116). Common parasites of farm animals, their life cycles, effects on the host, diagnosis, control, and public health importance. (3 hr. lec., 1 hr. lab.) (Offered in fall of even years.)

411. *Principles of Laboratory Animal Science.* 3 Hr. PR: Consent for undergraduates. The production, genetics, physiology, nutrition, disease, and regulations of laboratory animals use in research and teaching. This course meets minimal requirements for laboratory animal technical certification programs of the American Association of Laboratory Animal Science (AALAS). (Offered in fall of even years.)

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* I, II, S. 1-3 Hr. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Wildlife and Fisheries Management (WMAN)

150. *Principles of Conservation Ecology.* I. 3 Hr. Overview of the science of conservation ecology with emphasis on the concepts of biological diversity, extension, habitat loss and fragmentation, establishment of protected areas, endangered species, and establishment and preservation of new populations.

221. *Interpretive Bird Study.* II. 3 Hr. PR: BIOL 117 or consent. Intensive field studies in recognition through sight, song, and behavioral patterns of birds, and their ecology in the central Appalachians. (2 hr. lec., 2 hr. lab.)

224. *Vertebrate Natural History.* I. 3 Hr. PR: BIOL 117 or consent. Relationships of fish, amphibians, and reptiles to the forest, with emphasis on the ecology, taxonomy, evolution, natural history, and field identification of these groups. Laboratory emphasizes natural history and anatomy of fish, amphibians, and reptiles.

234. *Forest Wildlife Management.* 3. Hr. Principles and problems of forest wildlife management with emphasis on habitat management at the stand and landscape levels. Habitat manipulations through use of appropriate silvicultural practices, wildlife enhancement techniques, and regulations are evaluated.

313. *Wildlife Ecosystem Ecology.* I, II. 4 Hr. PR: BIOL 115 and BIOL 117. Basic principles of ecosystem, community, and population ecology. Emphasizing structure, function, succession, physiological ecology, population growth and regulation, and systems modeling.

425. *Mammalogy.* II. 3 Hr. PR: BIOL 117 or consent. Mammals and their biological properties with emphasis on life history, ecology, and distribution of regional forms.

426. *Ornithology.* II. 3 Hr. PR: BIOL 115 and BIOL 117 or consent. Identification, distribution, and ecology of birds (particularly of forest lands.) (2 hr. lec., 1 hr. lab.)

428. *Wildlife Policy and Administration.* II. 3 Hr. Study of the organization, authority, policies, programs, and administration of public agencies and private organizations concerned with fish and wildlife. Emphasis is in the legal and political role in making wildlife management decisions.

431. *Wildlife Habitat Techniques.* I. 3 Hr. PR: Wildlife major or consent; WMAN 313 and FOR 205. Field and laboratory techniques necessary in management and study of wildlife; collection of field data, mapping, censusing, habitat evaluation, wetland delineation, use of literature and scientific writing.

445. *Introduction to Fisheries Management.* II. 3 Hr. PR: WMAN 224 or consent. Basic principles of management of fishery resources, with an emphasis on freshwater stocks. Includes current environmental and management issues, concepts, and methods used in management of commercial and recreational fisheries.

446. *Limnology.* II. 4 Hr. PR: (BIOL 101 and BIOL 103) or WMAN 224 or consent. Physical, chemical, and biological characteristics of inland waters with emphasis on the structure and function of stream ecosystems.

449. *Fisheries Techniques.* I. 3 Hr. PR: BIOL 102 or BIOL 115. Study of the methods and techniques used in the study of fish and fisheries. Includes study of sampling methodologies, age and growth, marking and tagging, telemetry, and remote sensing. (2 hr. lec. 1 hr. lab.)

480. *Wildlife/Fisheries Field Tech.* I, S. 3 Hr. PR: Junior or senior standing. Survey of methods and techniques frequently used in the field by wildlife and fisheries managers. Class is taught off-campus.

490. *Teaching Practicum.* 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

498. *Honors.* 1-3 Hr. PR: Students in the Honors Program and consent by the Honors director. Independent reading, study, or research.

Women's Studies (WMST)

170. *Introduction to Women's Studies.* I, II. 3 Hr. (May be credited to University LSP Cluster A or B.) The major contexts in which woman's identity has been and is defined and of the relationships between these definitions and the roles and history of women (and men) in society and culture.

195 A. *Seminar.* 1-3 Hr.

215. *African Women Writers.* 3 Hr. Selected works by African women writers. (Also listed as FLIT 215.)

245. *Women in International Development.* 3 Hr. To examine the cultural diversities in the definition of women's roles and status, to investigate women's access to education, health, income, credit and technology, and to study women's contributions in third world development. (Also listed as TE 430.)

281. *American Indian Women Writers.* 3 Hr. Studies tribal oral tradition and its continuing existence in prose, myths, poetry, and stories. The works of contemporary Native American women writers will be studied and discussed as an outgrowth of this tradition.

293 A-Z. *Special Topics.* I, II, S. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

310. *The Aging Woman.* 3 Hr. Does gender make a difference in the aging process? This course examines the female experience of growing older. Lecture, discussion, review of literature, with focus on selected works of literature and the creative arts.

320. *Women, Religion, and Spirituality.* 3 Hr. Explores the exclusion of women from leadership in institutions of religion, the nature of the development of theology and spirituality that has disavowed the contributions of women, diversity of religious experience, writings of feminist theologians.

448. *Sexuality in American Culture.* II. 3 Hr. Explores changes in sexuality in the United States from the seventeenth century to the present, examining social and cultural struggles and debates over the meaning of sexuality and sexual orientation in American society.

449. *Women's Movements Since 1960.* 3 Hr. Contemporary women's movements; comparison of U.S. Second and Third Wave feminisms; critique of differing feminist theories; impact of race, class, sexual orientation, and controversies around pornography, rape, and reproductive rights.

490. *Teaching Practicum.* I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hrs.) Prearranged experimental learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics.* I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. *Seminar.* I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study.* I, II, S. 1-3 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

496. *Senior Thesis.* I, II, S. 1-3 HR. PR: Consent.

498. *Honors.* I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study or research.

Wood Science (WDSC)

223. *Wood Anatomy and Structure.* I. 3 Hr. PR: FOR 205. Anatomy and structure of commercial wood species of the U.S. Survey of basic properties of wood.

232. *Primary Conversion and Grading.* II. 3 Hr. PR: Forestry major or Consent. Principles of the conversion of raw materials in log form to primary wood products. Elements of the grading of raw materials and primary products. Production planning and control.

235. *Light-Frame Wood Construction.* I. 2 Hr. PR: Forestry major or Consent. Use of wood in light-frame construction. Basic design procedures and construction methods.

293. *Special Topics.* 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

330. *Wood Machining.* I. 3 Hr. Introduction to basic concepts of wood machining with emphasis on production equipment and furniture manufacturing. Special topics of wood joining techniques and methods. Analysis of operational safety, health hazards, and accident prevention. (Offered in Fall of even years.)

337. *Wood Adhesion and Finishing.* II. 3 Hr. PR: Wood industry major or Consent; WDSC 223. Fundamentals of the bonding and finishing of wood including preparation, processing, and evaluation of adhesive and finishing systems.

340. *Physical Behavior of Wood.* II. 3 Hr. PR: WDSC 223 and PHYS 101 and MATH 128. Specific gravity and density of wood; relationships between wood and liquids and applications in wood seasoning; thermal, electrical, and acoustical properties.

341. *Wood Mechanics.* 3 Hr. PR: Wood industry major or Consent; and WDSC 223, and MATH 155, and PHYS 101. Introduction to static properties of selections, elementary mechanics of deformable bodies, axial loading, column and beam analysis, and design considerations. (2 hr. lec., 1 hr. lab.)

351. *Forest Products Protection.* II. 3 Hr. PR: WDSC 223. Biological organisms responsible for deterioration of wood products, their control by preservative methods, and study of fire retarding methods.

362. *Forest Product Decision-Making.* 4 Hr. PR: Junior standing in forestry and MATH 155 and STAT 211. Use of decision making tools and techniques by forest products industry professionals, including examples of control chart techniques and acceptance sampling techniques, simulation modeling, linear programming, forcasting, and network analysis. (4 hr. lec.)

400. *Forest Measurement Field Practice.* S. 3 Hr. PR: Wood Industry major and FOR 205 and FMAN 322 and CE 200. Application of surveying and mensurational practices with emphasis on field problems.

401. *Wood Industries Field Trip.* S. 1 Hr. A one-week trip to observe manufacturing methods and techniques of commercial wood industry plants. Plants visited include furniture, plywood, veneer, hardboard, pulp and paper, sawmilling, and preservation.

413. *Wood Chemistry.* I. 3 Hr. PR: Wood industry major or Consent, and CHEM 231 or CHEM 233. Chemical composition of wood including cellulose, hemicellulose, and extractives. Chemical processing of wood.

422. *Harvesting Forest Products.* II. 3 Hr. PR: MATH 128 or equivalent and WDSC 232. Analysis of ground-based and cable harvesting systems, including time and motion studies, productivity and cost analysis, occupational safety and health, environmental issues, equipment evaluation and selection, and trucking of forest products. (2 hr. lec., 1 hr. lab.)

423. *Forest Roads.* I. 4 Hr. PR: CE 200 and CS 101. A study of techniques and methods of design, layout, and construction details of various standards of forest roads.

460. *Plant Layout for Wood Industries.* II. 3 Hr. PR: Senior standing. Relates knowledge of wood product processes to optimize production. Study of proper arrangement of machines and work and storage areas.

465. *Wood-Based Composite Materials.* 3 Hr. PR: WDSC 232 and WDSC 340 and WDSC 341. Fundamentals of manufacturing wood-based composite materials, including processing, products, evaluation, and applications in the marketplace. (2 hr. lec., 1 hr. lab.)

490. *Teaching Practicum.* 1-3 hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience.* 1-18 hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493. *Special Topics.* 1-6 hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* 1-3 hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 hr. PR: Consent.

498. *Honors.* 1-3 hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

West Virginia University Faculty

College of Business and Economics

Accounting

Professors

Richard C. Brooks, Ph.D. (LSU). CGFM. Managerial accounting, Governmental accounting, Public sector accounting

Jay H. Coats, Ph.D. (U. of Pitt.). Cost and managerial accounting, Accounting education.

Robert S. Maust, M.S. (WVU). CPA. Financial accounting, Accounting theory, Managerial and cost accounting.

Adolph A. Neidermeyer, Ph.D. (U. Iowa). Federal and state income taxation, Estate and personal financial planning, Financial accounting.

David B. Pariser, Ph.D. (So. Ill.). CPA, CMA, CGFM, CCA. Financial accounting, Governmental accounting and auditing, Public sector accounting, International accounting.

Ann B. Pushkin, Ph.D. (VPI & SU). CPA. Assurance services, Accounting information systems, Financial reporting fraud.

Gail A. Shaw, Ph.D. (U. Mo.). CPA. *Emeritus.*

G. Stevenson Smith, Ph.D. (U. Ark.). CPA, CMA, CCA. Not-for-profit and governmental accounting, Cost accounting, Managerial accounting, E-commerce and Internet security.

Associate Professors

Bonnie W. Morris, Ph.D. (U. of Pitt.). CPA. Accounting information systems, Intelligent systems and E-commerce, Information technology auditing.

Timothy A. Pearson, Ph.D. (U. Wisc.). CPA. Auditing, Financial accounting, Electronic systems applications.

Charles P. Skaggs, M.S. (WVU). CPA. *Emeritus.*

Assistant Professors

Anthony J. Amoruso, Ph.D. (U. Ga.). CPA. Assurance services, Financial accounting, International auditing standards.

Richard A. Riley, Jr., Ph.D. (U. Tenn.). CPA. Financial accounting, Auditing.

Lecturers

Frank A. DeGeorge, M.S.A. (Duquesne U.). CPA. Financial and managerial accounting.

Nancy P. Lynch, M.S. (U. Colo.). CPA, CMA. Principles of accounting.

Nancy C. Ruhe, M.P.A. (WVU). CPA. Principles of accounting.

Economics

Professors

Donald R. Adams, Jr., Ph.D. (U. Pa.). American economic history, European economic history, Economic development.

Vance 0. Alvis, Ph.D. (U. Va.). *Emeritus.*

Ronald J. Balvers, Ph.D. (U. of Pitt.). Financial economics, Macroeconomic theory.

Lewis C. Bell, Ph.D. (U. Ky.). *Emeritus.*

Robert Britt, Ph.D. (U. Colo.). *Emeritus.*

Thomas Campbell, Ph.D. (U. of Pitt.). *Emeritus.*

Clifford B. Hawley, Ph.D. (Duke U.). Labor economics, Microeconomic theory, Econometrics.

Ming-jeng Hwang, Ph.D. (Tx. A&M U.). General theory, Urban and regional economics, Mathematical economics.

Kern 0. Kymn, Ph.D. (U. Chicago). General theory, Mathematical economics, Econometrics.

Patrick C. Mann, Ph.D. (Ind. U.). Utility economics, Industrial organization.

Douglas Mitchell, Ph.D. (Princeton U.). Monetary theory, Macroeconomic theory.

William S. Reece, Ph.D. (Wash. U., St. Louis). Public economics, Econometrics.

Tom S. Witt, Ph.D. (Wash. U. St. Louis). Econometrics, Energy economics, Regional economics.

Associate Professors

Subhayu Bandyopadhyay, Ph.D. (U. Md.). International trade, International finance.

Sudeshna Bandyopadhyay, Ph.D. (U. Md.). Labor economics.

Brian Cushing, Ph.D. (U. Md.). Urban and regional economics, Econometrics, Public finance.

Stratford M. Douglas, Ph.D. (U.N.C.). Econometrics, Industrial organization, Corporate finance.

Russell S. Sobel, Ph.D. (Fla. St. U.). Public Economics, Public choice.

William Trumbull, Ph.D. (U.N.C.). Public finance, Law and economics, Applied microeconomics.

Assistant Professors

Santiago Pinto, Ph.D. (U. Ill. UC). Public economics, Urban economics.

Royce J. Watts, M.S. (WVU). Statistics.

Finance

Professors

Howard L. Brewer, Ph.D. (U. Iowa). *Emeritus.*

Victor Chow, Ph.D. (U. Ala.). Corporate finance, Portfolio management.

Joseph Newhouse, M.S. (WVU). *Emeritus.*

William B. Riley, Ph.D. (U. Ark.). Investments, Capital markets.

Frederick C. Scherr, Ph.D. (U. of Pitt.). Corporate finance, Capital markets.
Anthony Tuberose, Ph.D. (U. Tx.). *Emeritus.*
Fred E. Wright II, M.A. (WVU). *Emeritus.*

Associate Professors

Ashok Abbott, Ph.D. (VPI & SU). Financial institutions, Corporate finance, Mergers and acquisitions.
Karen Denning, Ph.D. (U. of Pitt.). Corporate finance, Speculative markets, Economic regulation.
Terry L. Rose, Ph.D. (U. Ill.). Insurance, Risk management.
Paul J. Speaker, Ph.D. (Purdue U.). Financial institutions, Modeling, Uncertainty.

Assistant Professor

Heather M. Hulburt, Ph.D. (Penn. St. U.). Corporate finance, Insurance.

Management and Industrial Relations

Professors

Neil Bucklew, Ph.D. (Wisc.). Economics, Industrial relations.
Randyl D. Elkin, Ph.D. (Iowa St. U.). Labor relations, International human resources, Conflict management.
Jack A. Fuller, Ph.D. (U. Ark.) Heuristic decision making, Production planning and control, Systems analysis and design.
Richard W. Humphreys. M.A. (U. Wisc.). *Emeritus.*
Thomas S. Isaack, Ph.D. (Ind. U.). *Emeritus.*
Ali H. Mansour, Ph.D. (U. Ga.). Management information systems, Management science, Production operations management.
Dietrich L. Schaupp, D.B.A. (U. Ky.). Organizational performance and development, Labor management cooperation.

Associate Professors

Gerald Blakely, Ph.D. (U.N.C.). Human resources management, Organizational behavior.
Thomas L. Blaskovics, Ed.D. (U. Wisc.). *Emeritus.*
James Denton, Ph.D. (Kent St. U.). Decision science, Operations management.
John Harpell, Jr., D.B.A. (Ga. St. U.). *Emeritus.*

Assistant Professors

Danielle Beu, Ph.D. (U. Okla.). Human resource management, International management.
David Dawley, Ph.D. (Fla. St. U.). Strategic management.
Richard M. Gardner, M.B.A. (WVU). *Emeritus.*
Gary Insch, Ph.D. (Ind. U.). International business/strategic management, Marketing.
Virginia F. Kleist, Ph.D. (U. of Pitt). Management information systems.
Nancy Leonard, Ph.D. (U. Rhode Island). Management, Organizational behavior.
Graham Peace, Ph.D. (U. of Pitt.). Management information systems.
Abhishek Srivastava, Ph.D. (U. of Md.). Organizational behavior.
Robert Stevens, Ph.D. (Ind. U.). Strategic management.
Linda Sypolt, J.D. (WVU). Copyright/patents, Labor law.

Instructor

George Markusic, J.D. (WVU). Business law.

Marketing

Professors

Ravi Achrol, Ph.D. (Northwestern U.). Marketing channels, Marketing strategy.
Paula F. Bone, Ph.D. (U.S.C.). Consumer behavior, Promotion, Marketing research.
Cyril M. Logar, D.B.A. (Kent St. U.). Health care marketing, Strategic marketing and planning, Marketing research.
Thomas Ponzurick, D.B.A. (Memphis St. U.). Services marketing, Transportation, Health care and entertainment-related services, International marketing.

Associate Professors

Robert B. Connor, M.B.A. (WVU). *Emeritus.*
Robert W. Cook, D.B.A. (Kent St. U.). Sales management, Product management, Marketing strategy and planning, Retail management.
Robert Corey, Ph.D. (Penn. St. U.). Channels of distribution, New product development, Direct marketing, Retail management, Business ethics.
Karen R. France, Ph.D. (U. of Pitt.). Ethics, Pricing, Health-care marketing.
Philip Mahin, M.B.A. (U. Penn.). *Emeritus.*

Assistant Professor

John L. Porter, M.B.A. (WVU). *Emeritus.*

College of Creative Arts

Art

Professors

Robert P. Anderson, M.F.A. (Alfred U.). Ceramics.
John D. Clarkson, M.A. (U. Pitt.). *Emeritus.*
Urban Couch, M.F.A. (Cranbrook Acad. Art). *Emeritus.*
Barbara A. Drainer, Ed.D (Columbia U). *Emerita.*
Eve Faulkes, M.F.A. (Ri. Sch. Design). Graphic design.
Ben Freedman, M.A. (U. Az.). *Emeritus.*
Clifford A. Harvey, B.F.A. (Mpls. C. Art & Design). Graphic design.
Alison Helm, M.F.A. (Syracuse U.). Sculpture.
Paul Krainak, M.F.A (North Ill. U.). Painting.
Margaret T. Rajam, Ph.D. (U. Mich.). *Emerita.*
Bernard Schultz, Ph.D. (U. of Pitt.). Dean. Art history, Italian renaissance, Modern art, Art theory.
Sergio Soave, M.F.A. (WVU). Chairperson. Printmaking.

Associate Professors

Victoria Fergus, Ph.D. (Purdue U.) Art education.
William J. Thomas, Ph.D. (Penn. St. U.) Art education.

Assistant Professors

Robert Bridges, M.F.A. (WVU). Printmaking, Curator of art collections.
Shaila Christofferson, M.F.A. (U. Neb.). Visual foundation, Sculpture.
Young Kim, M.F.A. (U. Ky.). Photography.
Kristina Olson, M.A. (SUNY, Stony Brook). Art criticism and contemporary art, Curator.
Janet Snyder, Ph.D. (Columbia U.). Art history, Medieval art.

Instructors

Lynn Proden, M.A. (WVU). Art history.
Naijun Zhang, M.F.A. (WVU). Painting.

Visiting Assistant Professors

Jennifer Blazina, M.F.A. (Cranbrook). Printmaking.
Ann Hoffman, M.F.A. (Alfred). Digital media.
Robert Hopson, Ph.D. (U. Iowa). Art history.
Kim Owens, M.F.A. (Towson U.). Painting.

Music

Professors

Peter Amstutz, D.M.A. (Peabody Cons.). Coordinator of keyboard instruments, Piano.
John Beall, Ph.D. (Eastman School of Mus.). Composition, Theory.
James W. Benner, M.A. (Columbia U.). *Emeritus.*
Thomas S. Brown, Ph.D. (Northwestern U.). *Emeritus.*
Lawrence Christianson, B.A. (San Diego St. U.). Director of orchestral activities, Orchestra, Conducting.
Jon Crain, *Emeritus.*
Clyde M. English, D.S.M. (Union Theol. Sem.). *Emeritus.*
Philip J. Faini, M.M. (WVU). *Emeritus.*
Herman Godes, M.M. (Latvian St. Mus. Acad.). *Emeritus.*
William P. Haller, D.M.A. (N. Tx. St. U.). Assistant chair of graduate studies, F.A.G.O., Organ, Theory.
Leo Horacek, Jr., Ph.D. (U. Kans.) *Emeritus.*
Barton Hudson, Ph.D. (Ind. U.) *Emeritus.*
Christine B. Kefferstan, D.M.A. (U. of Cinn.). Piano.
Gerald Lefkoff, Ph.D (Cath. U. Am.). *Emeritus.*
Margaret S. Lorince, M.M. (Eastman Sch. of Mus.). *Emerita.*
James E. Miltenberger, D.M.A (Eastman Sch. of Mus.). Piano, Piano repertoire, Jazz.
Augusto Paglialunga, M.M. (New England Conserv.). Voice.
William Skidmore, M.M. (U. Ill). Coordinator of strings, Cello, Chamber music.
Robert H. Thieme, Jr., M.M. (WVU). Director of WVU opera theatre, Coordinator of voice, Opera, Vocal repertoire, Accompanying-coaching.
Gilbert Trythall, D.M.A. (Cornell U.). *Emeritus.*
John F. Weigand, D.M.A. (Fla. St. U.). Coordinator of woodwinds, Clarinet, Chamber music.
Don G. Wilcox, M.A. (Cal. St. at Long Beach). Director of bands, Coordinator of large ensembles, Band, Conducting.
Cecil B. Wilson, Ph.D (Case West. Res. U.). Musicology, Nineteenth century music, Orchestration.
Frances Yeend. *Emerita.*

Associate Professors

Cynthia Anderson, M.M. (Manhattan Sch.). Oboe, Theory.
David Bess, Ph.D. (WVU). Chairperson. Instrumental music education.
Joyce A. Catalfano, M.M. (Ithaca Col.). Flute, Chamber music.
Rose M. Crain, *Emerita.*
John E. Crotty, Ph.D. (Eastman Sch. of Mus.). Coordinator of theory and composition, Music theory.

John Hendricks, M.M. (WVU). Assistant chair of undergraduate studies. Assistant director of bands, Music education.
Keith Jackson, D.M.A. (Az. St. U.). Director of graduate studies. Trombone, Euphonium, Jazz, Chamber music.
Curtis Johnson, M.M. (WVU). Saxophone, Jazz studies.
Peter Lightfoot, Prof. Diploma. (Julliard Sch.). Voice.
Janis-Rozena Peri, M.M. (Miami U.). Voice.
Janet Robbins, Ph.D (Ohio St. U.). General music education.
Paul Scea, M.M. (U. of Iowa). Director and coordinator of jazz studies. Jazz, Chamber music, Theory.
Kathleen Shannon, D.M.A. (U. of Miami). Director of choral activities. Choral music education.
Connie Arrau Sturm, Ph.D. (U. Okla.). Piano pedagogy, class piano, Piano.
June D. Swartwout, M.M. (WVU). *Emerita.*
Virginia Thompson, D.M.A. (U. of Iowa). Horn, Chamber music.
Molly Weaver, Ph.D. (U. Mich.). Coordinator of music education, Instrumental music education.
Christopher Wilkinson, Ph.D. (Rutgers U.). Coordinator of music history, Music history.
John Winkler, D. Mus. (Northwestern U.). Coordinator of brass instruments, Trumpet, Chamber music.

Assistant Professors

Peter Dennee, Ph.D. (U. Ariz.). Choral music education.
Mary Ferer, Ph.D. (U. Ill). Coordinator of music history, Music history.
Laura Kobayashi, D.M.A. (U. Mich.). Violin.
Adam Mason, M.M. (WVU). Coordinator of percussion area.
Jane R. Pestun, M.M. (WVU). *Emerita.*
David Taddie, Ph.D. (Harvard). Music theory, Electronic music.
Philip Tietze, M.M. (U. South. Cal.). Viola, Chamber music.
Paschal Younge, Ph.D (WVU). Director of world music. African music and dance, Theory.

Visiting Assistant Professors

Andrew Kohn, M.M. (U. of Iowa). Double bass, Theory.
Peter Kolkay, M.M. (Yale). Bassoon, Theory.

Lecturers and Adjunct Faculty

Cindy Conner-Bess, M.M. (U. Cinn.). Music education, Voice.
Joel Cotter, M.M. (WVU). Trumpet.
Dearl J. Drury, M.M. (WVU). Band.
Scott Elliott, M.M. (Duquesne U.). Guitar.
Jeanne Frieben, M.M. (WVU). Coordinator of the community music program. Clarinet, Chamber music.
Ellie Mannette, Steel drum manufacturing performance technology.
David P. McCollum, M.M. (Duquesne U.). Tuba.
Albert J. Wrublesky, M.M. (WVU). Percussion.

Theatre and Dance

Professors

Frank Gagliano, M.F.A. (Columbia U). Claude Worthington Benedum Professor, Playwriting.
Charles D. Neel, Ph.D (Cornell U.). *Emeritus.*
Joann Spencer-Siegrist, M.F.A. (U. Ga.). Puppetry, Creative dramatics.
John C. Whitty, Ph.D. (U. Iowa). *Emeritus.*
M. Kathryne Wiedebusch, M.A. (WVU). Dance.

Associate Professors

W. James Brown, M.F.A. (U. Wash.). Theatre design.
Theresa Davis, M.F.A. (Va. Commonwealth U.). Acting.
Jerry McGonigle, M.F.A. (Am. Conserv. Theatre). Acting, Directing.
Margaret A. McKowen, M.F.A. (U. of Tx., Austin). Costume design.
Victor McQuiston, M.F.A. (Ohio St. U.). Technical direction.
Linda D Milian, M.F.A. (Rutgers U.). Costuming.
William J. Winsor, M.F.A. (Ohio St. U.). Theatre design.

Assistant Professors

Philip Beck, M.F.A. (WVU). Acting, Directing.
Jay Malarcher, Ph.D. (LSU). Theatre history/criticism.
Jessica Morgan, M.F.A. (Ohio St. U.). Acting/movement.
Kate Udall, M.F.A. (U. of Ca., San Diego). Acting.

Visiting Assistant Professor

Troy Snyder, M.F.A. (U. of NCG). Theatre design.

Lecturers and Adjunct Faculty

Alison Cox, B.F.A. (Radford U.). Dance.
Zelma Badu-Younge Dance, Ph.D. (McGill U., Quebec Canada), M.A. (York U., Canada). Dance ethnology.
Cathy O'Dell, M.F.A. (WVU). Theatre.
Carole Wiedebusch, M.A. (WVU). Dance.

College of Engineering and Mineral Resources

Chemical Engineering

Professors

Richard C. Bailie, Ph.D. (Iowa St. U.). *Emeritus.*

Eung Ha Cho, Ph.D. (U. Utah). Mineral processing, Hydrometallurgy

Eugene V. Cilento, Ph.D. (U. Cinn.). Dean. Physiological transport phenomena, Biomedical engineering.

Dady B. Dadyburjor, Ph.D. (U. Del.). Chair. Catalysis, Reaction engineering, Coal liquefaction.

Alfred F. Galli, M.S. (WVU). *Emeritus.*

Rakesh K. Gupta, Ph.D. (U. Del.). GE Plastics Professor, Polymer processing, Rheology, Non-Newtonian fluid mechanics.

Hisashi O. Kono, Dr. Engr. (Kyushu U.). Fluidization, Powder technology, Reaction engineering

Edwin L. Kugler, Ph.D. (Johns Hopkins U.). Heterogeneous catalysis, Adsorption, Reaction kinetics, Materials science, Zeolites, Ceramics, Hard metals.

Alfred H. Stiller, Ph.D. (U. Cinn.). Chemistry (physical/inorganic chemistry). Solution chemistry, Coal liquefaction.

Richard Turton, Ph.D. (Ore. St. U.). Gas-solid systems, Fluidization, Kinetics, Thermodynamics.

Ray Y.K. Yang, Ph.D. (Princeton U.). Chemical reaction engineering, Biochemical engineering, Modeling and simulation.

John W. Zondlo, Ph.D. (Carnegie Mellon U.). Heat transfer, Fluid mechanics, Coal processing.

Associate Professors

Joseph A. Shaeiwitz, Ph.D. (Carnegie Mellon U.). Engineering education, Design education, Out-comes assessment.

Charter Stinespring, Ph.D. (WVU). Electronic materials, Surface reactions, Spectroscopy.

Civil and Environmental Engineering

Professors

Samuel G. Bonasso, M.S.C.E., P.E. (WVU). Adjunct. Cable transportation, Street engineering, Communication and creativity in engineering.

H. L. Chen, Ph.D. (Northwestern U.). Structural dynamics, Structural experimentation, Dynamic soil-structure interaction, Damage in reinforced concrete structures.

Julio F. Davalos, Ph.D. (VPI). Benedum Distinguished Teaching Professor. Finite element analysis and modelling of structures, Fracture mechanics of interfaces, Materials characterization of fiber-reinforced polymers and wood composites.

Ronald W. Eck, Ph.D., P.E. (Clemson U.). Transportation engineering, Traffic, Highways.

Ronald H. Fortney, Ph.D. (WVU). Research. Environmental science, Wetland ecology, Environmental issues and policies.

Hota V.S. Ganga Rao, Ph.D., P.E. (N.C. St. U.). Mathematical modeling of engineering systems, Bridge engineering, Composite materials.

James L. Green, M.S.C.E., P.E. (WVU). Adjunct. Environmental engineering, Water treatment, Water quality.

Udaya B. Halabe, Ph.D., P.E. (MIT) Non-destructive evaluation and In-Situ condition. Assessment of structures and materials, Wave propagation, Structural analysis and dynamics.

William J. Harman, M.S.C.E., P.E. (WVU). Adjunct. Construction methods, Construction specifications.

W. Joseph Head, Ph.D. (Purdue U.). *Emeritus.*

Charles R. Jenkins, Ph.D. (Okla. St. U.). *Emeritus.*

Larry D. Luttrell, Ph.D., P.E. (Cornell U.). *Emeritus.*

Michael McCawley, Ph.D. (N.Y.U.). Research. Environmental engineering, Air pollution, Air quality.

William A. Sack, Ph.D., P.E. (Mich. St. U.). *Emeritus.*

Samir Shoukry, Ph.D. (Birmingham, UK). Pavement modeling and evaluation, Dynamics, Vibrations, Composite materials, Instrumentation.

Hema J. Siriwardane, Ph.D., P.E. (VPI & SU). Geotechnical engineering, Geomechanics, Geoenvironmental engineering, Finite element method, Computer applications.

John Zaniewski, Ph.D., P.E. (U. Tx., Austin). Asphalt Technology Professor. Pavement materials, Design, Construction, Maintenance, Pavement and infrastructure management systems.

Associate Professors

Dennis C. Chambers, M.S.C.E., P.E. (WVU). Adjunct. Geotechnical engineering, Construction and materials.

Darrell R. Dean, Jr., Ph.D., P.S. (Purdue U.). Land surveying, Mapping, Photogrammetry.

Robert N. Eli, Ph.D., P.E. (U. Iowa). Hydrology, Hydraulics, Computer graphics.

Donald D. Gray, Ph.D., P.E. (Purdue U.). Fluid flow, Computational fluid mechanics.

David R. Martinelli, Ph.D. (U. Md.). Chair. Transportation engineering, Engineering economics, Systems analysis, Applications of advanced technologies.

Robert W. Wheeler, M.S.C.E. (WVU). Adjunct. Environmental engineering, Public health, Water supply.

William D. Wyant, M.S.C.E. (WVU). Adjunct. Transportation engineering, Construction methods.

Assistant Professors

Karl E. Barth, Ph.D. (Purdue). Experimental and analytical analysis of steel structures.

L. James French, Ph.D., P.E. (WVU). Research. Traffic operations, Highway engineering,Transportation planning.

Indrajit Ray, Ph.D. (IIT). Concrete science and technology, High-performance cementitious materials, Durability of concrete, Utilization of waste/by-products in concrete.

Franklin R. Schutz, M.S., P.E. (NYU). Adjunct. Environmental engineering, Small community wastewater treatment, Technology transfer.

Kumaraswamy Sivakumaran, Ph.D. (Co. St. U.). Adjunct. Water resources planning and management.
Roger C. Viadero, Jr., Ph.D. (WVU). Environmental engineering, Physical and chemical processes, Remediation of natural systems, Aquacultural engineering.
P.V. Vijay, Ph.D. (WVU). Research. Design, testing, modeling, and construction of reinforced concrete structures, Repair and rehabilitation of aged highway infrastructure using FPR composites.

Computer Science and Electrical Engineering, Lane Department of

Professors

Hany H. Ammar, Ph.D. (U. Notre Dame). Modeling and evaluation of parallel and distributed systems performance and dependability.
John M. Atkins, Ph.D. (U. Pitt.). Design of database management systems, Analysis of algorithms, Mathematics of computation.
Walton W. Cannon, Ph.D., P.E. (U. Ill.). *Emeritus.*
Mohammad A. Choudhry, Ph.D. (Purdue U.). Power system control, DC transmission, Stability.
Wils L. Cooley, Ph.D., P.E. (Carnegie Mellon U.). Associate chairperson. Biomedical engineering, Electronics, Design.
Parviz Famouri, Ph.D. (U. Ky.). Analysis and control of electromechanical systems, Power electronics.
Ali Feliachi, Ph.D. (Ga. Tech.). Large-scale systems, Adaptive control, Power systems.
David G. Frazer, Jr., Ph.D. (Penn. St., WVU). Adjunct. Lung physiology, Instrumentation.
D. Michael Henry, Ph.D. (TCU). Databases, Cryptography, Neural networks.
Franz X. Hiergeist, Ph.D. (U. of Pitt.). Mathematics of computation.
Lawrence A. Hornak, Ph.D. (Rutgers U.). Optics, VLSI, Integrated Optics, Microstructures.
Ronald L. Klein, Ph.D. (U. Iowa). Automatic control, Estimation theory, System identification, Power systems.
Powsiri Klinkhachorn, Ph.D. (WVU). Microprocessor applications, Computer architecture, Binary and non-binary logic.
Ali Mili, Ph.D. (U. of Ill.). Adjunct. Software engineering.
Wayne A. Muth, Ph.D. (Iowa St. U.). *Emeritus.*
Roy S. Nutter, Jr., Ph.D., P.E. (WVU). Electric vehicles, Neural networks, Micro-processor systems, Computer architecture.
Y. V. Ramana Reddy, Ph.D. (WVU). Artificial intelligence, Knowledge-based simulation, Computer graphics.
George E. Trapp, Ph.D. (Carnegie Mellon U.). Chairperson. Numerical analysis, Mathematical programming, Network models.
Jeffrey Voas, Ph.D. (Coll. of William and Mary). Adjunct. Software engineering.

Associate Professors

William H. Dodrill, M.S. (Columbia U.). *Emeritus.*
V. Jagannathan, Ph.D. (Vanderbilt U.). Distributed intelligent systems, Internet and security technologies.
Mark A. Jerabek, Ph.D., P.E. (Purdue U.). Acoustics, Ultrasonic tomography, Electromagnetics.
Robert L. McConnell, Ph.D. (U. Ky.). Digital electronics, Electronic instrumentation, Power control, Design.
James D. Mooney, Ph.D. (Ohio St. U.). Associate chairperson. Operating systems, Computer architecture, Software portability.
Afzel Noore, Ph.D. (WVU). Fault-tolerant computing, Design for testability, VLSI design and testing, Software engineering, Consumer electronics.
Frances L. Van Scoy, Ph.D. (U. Va.). Programming languages and compilers, Software engineering, Parallel processing.

Assistant Professors

Donald A. Adjeroh, Ph.D. (Chinese U. of Hong Kong). Multimedia information systems (images, video, and audio), Distributed multimedia systems.
Bojan Cukic, Ph.D. (U. Houston). Software reliability assessment, High assurance systems, Program transformation.
Elaine M. Eschen, Ph.D. (Vanderbilt U.). Design and analysis of algorithms, Graph theory, Combinatorics.
Katerina Goseva-Popstojanova, Ph.D. (U. Sv. Kiril I Metodij). Software reliability engineering, Fault-tolerant systems, Computer security, Dependability, Performance and performability modeling, and evaluation.
Takamitsu Kawai, M.S. (Nagoya U.). Visiting. Virtual reality, Computer graphics, Computer music.
Dimitris Korakakis, Ph.D. (Boston U.). Research. Semiconductor growth, Nanotechnology, Wide bandgap semiconductor devices, Photonic devices, Semiconductor alloys and heterostructures, Bio-sensors.
Xin Li, Ph.D. (Princeton U.). Image processing.
Supratik Mukhopadhyay, Ph.D. (U. of Saarland). Computer aided verification, Program analysis, Software engineering, Logics of knowledge, Database theory, Artificial intelligence, Set constraints.
Daryl Reynolds, Ph.D. (Tx. A&M U.). Research. Statistical signal processing for communications, Multiuser detection, Space-time coding and processing, Iterative (turbo) processing, Call, access, and power control for multiuser detection, Transmitter precoding.
Stephanie Caswell Schuckers, Ph.D. (U. Mich.). Research. Biometrics, Bio-engineering, Systems and signals.
Mark Shereshevsky, Ph.D. (U. of Warwick, UK). Research. Dynamical systems, Chaos theory, Cellular automata, Information theory, Neural networks.
K. Subramani, Ph.D. (U. of Md.). Design and analysis of algorithms, Complexity, Combinatorics.
Matthew C. Valenti, Ph.D. (Va. Tech.). Communication theory, Wireless systems, Error control coding.

Research Associate Professors

Srinivas Kankanahalli, Ph.D. (New Mexico St. U.). All aspects of computer security, Security related to storage and file systems.

Sumitra Reddy, Ph.D. (WVU). Healthcare informatics, Componentware, Intelligent systems, Information technology evaluation.

Lecturers

Vic Baker, M.S.C.S. (WVU). Virtual reality.

Camille Hayhurst, M.S.C.S. (WVU). Software development/engineering, Database.

Rebecca Littleton, M.S.C.S. (WVU). Design and development of multimedia, Instructional, web-based systems.

Todd Montogomery, M.S.E.E. (WVU). Communication protocols, Fault-tolerant systems, Network security.

Cynthia D. Tanner, M.S.C.S. (WVU). Software development software engineering.

Industrial and Management Systems Engineering

Professors

Rashpal S. Ahluwalia, Ph.D., P.E. (Western Ontario U.). Computer integrated manufacturing, Flexible manufacturing, Robotics, Expert systems, Process control and modeling.

Jack Byrd, Jr., Ph.D., P.E. (WVU). Operations research, Production systems, Entrepreneurial studies.

Robert C. Creese, Ph.D., P.E. (Penn. St. U.). Manufacturing processes/systems, Foundry engineering, Cost engineering.

Daniel E. Della-Gustina, Ph.D. (Mich. St. U.). Safety management services, Sport safety, Transportation safety.

Wafik H. Iskander, Ph.D., P.E. (Tx. Tech. U.). Interim chair. Operations research, Simulation, Applied statistics.

Majid Jaraiedi, Ph.D. (U. Mich.). Quality control and applied statistics, Information systems, Human factors.

Warren Myers, Ph.D., C.I.H. (WVU). Interim associate dean for academic affairs. Industrial hygiene, Ergonomics, Safety engineering.

Ralph W. Plummer, Ph.D., P.E. (WVU). Human factors, System safety, Industrial hygiene.

Garry Winn, Ph.D. (Ohio St. U.). Safety studies, Transportation safety.

Associate Professors

B. Gopalakrishnan, Ph.D. (VPI). Manufacturing engineering, Artificial intelligence, Concurrent engineering.

Steven Guffey, Ph.D., C.I.H. (N.C.U.). Ventilation, Industrial hygiene.

Andrew Sorine, Ed.D. (WVU). Safety studies/management education.

Assistant Professors

David L. Durham, M.S. (WVU). Research, Environmental management.

Michael J. Klishis, Ph.D. (WVU). Mine training, Curriculum development.

Allen McKendall, Jr., Ph.D. (U. of Mo.–Columbia). Operations research and manufacturing engineering.

David Whaley, Ph.D., C.I.H. (St. U. of NY). Industrial hygiene, environmental management.

Visiting Professor

Steven Wiker, Ph.D., (U. of Mich.). Ergonomics.

Mechanical and Aerospace Engineering

Professors

Richard A. Bajura, Ph.D., P.E. (U. Notre Dame). Fluids engineering.

Ever Barbero, Ph.D. (VPI). Chairperson. Materials, Experimental and computational mechanics.

Edward F. Byars, Ph.D., P.E. (U. Ill.). *Emeritus.*

Ismail Celik, Ph.D. (U. Iowa). Fluids engineering.

Keh-Minn Chang, Ph.D. (U. of Ca. Berkley). Research. Materials, Physical metallurgy.

Nigel Clark, Ph.D. (U. Natl, So. Africa). Engines and emissions, Multiphase flows.

Russell K. Dean, Ph.D. (WVU). Associate provost for curriculum and instruction. Engineering mechanics.

Mridul Gautam, Ph.D. (WVU). Fluid mechanics.

Hasan T. Gencsoy, M.S.M.E. (WVU). *Emeritus.*

Russell R. Haynes, Ph.D., P.E. (WVU). Adjunct. Engineering design.

Eric K. Johnson, Ph.D., P.E. (U. Wisc.). Heat transfer, Combustion, Thermodynamics, Gas-solid flows.

John Kuhlman, Ph.D. (Case West. Res. U.). Fluid mechanics.

Steve Lewellen, Ph.D. (UCLA). Research, Fluid dynamics.

Thomas R. Long, Ed.D. (WVU). Engineering design.

John L. Loth, Ph.D., P.E. (U. Toronto). Aerospace systems, Combustion.

Donald W. Lyons, Ph.D. (Ga. Tech.). Manufacturing systems engineering, Instrumentation.

Kenneth H. Means, Ph.D., P.E. (WVU). Kinematics, Dynamics and stability, Friction and wear.

Gary Morris, Ph.D. (WVU). Experimental fluid mechanics, Aerodynamics, Combustion.

Victor Mucino, D.E. (U. Wisc.–Mil.). Engineering design.

Marcello Napolitano, Ph.D. (Okla. St. U.). Aircraft stability and control, Feedback control, Dynamics.

In-Meei Neou, Ph.D. (Stanford U.). *Emeritus.*

Timothy Norman, Ph.D. (Purdue). Advanced composite materials, Fracture mechanics, Experimental mechanics, Biomechanics.

G. Michael Palmer, Ph.D. (WVU). Instrumentation, Microprocessor applications.

Augustine A. Pitrolo, B.S.M.E. (WVU). Adjunct. Fossil energy.

Harold Schall, B.S. (C.W. Post Coll.). Adjunct. Quality function deployment.

Samir Shoukry, Ph.D. (U. Aston in Birmingham). Structural dynamics, Neural nets, Instrumentation.

Nithi T. Sivaneri, Ph.D. (Stanford U.). Structural mechanics, Composite materials, Numerical methods.

Robert D. Slonneger, M.S.M.E., P.E. (U. Tx.). *Emeritus.* Thermodynamics, Computer applications.
James E. Smith, Ph.D. (WVU). Mechanical design.
John E. Sneckenberger, Ph.D., P.E. (WVU). Mechanical design and automation.
William Squire, M.A. (U. Buffalo). *Emeritus.*
Charles Stanley, Ph.D. (WVU). Pulmonary bioengineering, Mechanical instrumentation.
Richard E. Walters, Ph.D. (WVU). *Emeritus.*

Associate Professors

Rodney Anderson, Ph.D. (U. Mo.–Rolla). Adjunct. Aerosol and particle science.
Chris Atkinson, Sc.D. (MIT). Adjunct. Fluid mechanics, Instrumentation, Engine emissions.
Larry Banta, Ph.D. (Ga. Tech.). Associate chairperson and undergraduate program director. Automation, Controls, Energy management.
Bruce Kang, Ph.D. (U. Wash.). Experimental mechanics.
David Lewellen, Ph.D. (Cornell). Research. Fluid dynamic turbulence.
John E. Notestein, M.S.M.E. (Purdue U.). Adjunct. Fossil energy.
Jacky Prucz, Ph.D. (Ga. Tech.). Associate chairperson and graduate program director. Structural dynamics, Composite materials.
Jaiyoung Ryu, M.D. (Catholic Med. Coll. Korea). Adjunct. Bioengineering.
Larry D. Strickland, Ph.D. (WVU). Adjunct. Fossil energy.
Wallace S. Venable, Ed.D. (WVU). *Emeritus.* Engineering mechanics, Engineering education.

Assistant Professors

Giampiero Campa, (U. of Pisa). Research. Flight control systems.
John R. Etherton, M.S. (Geo. Wash. U.). Adjunct. Mechanical system safety.
Wade W. Huebsch, Ph.D. (Iowa St. U.). Fluid mechanics, Computational fluids, Numerical methods.
Nilay Mukherjee, Ph.D. (Va. Commonwealth U.). Biomedical engineering.
Andrei Smirnov, Ph.D. (Chalmers). Coupled multiphysics simulation.
Gregory Thompson, Ph.D. (WVU). Research. Thermodynamics, Machine design.
W. Scott Wayne, Ph.D. (WVU). Research. Engines machine design, Alternative fuels.
Ibrahim Yavuz, Ph.D. (WVU). Research. Finite volume, Combustion CFD.

Mining Engineering

Professors

Jay H. Kelley, Ph.D. (Penn. St. U.). Distinguished. *Emeritus.*
A. Wahab Khair, Ph.D. (Penn. St. U.). Rock mechanics, Ground control, Mine survey.
Syd S. Peng, Ph.D. (Stanford U.). Chairperson. Charles T. Holland Distinguished Professor of Mining Engineering. Longwall mining, Ground control.
Y. J. Wang, Ph.D. (Penn. St. U.). *Emeritus.*
Kelvin K. Wu, Ph.D. (U Wisc.). Adjunct. Health and safety, Mine management.

Associate Professors

Donald M. Bondurant, M.S.E.M. (WVU). *Emeritus.*
Keith A. Heasley, Ph.D. (Colo. School of Mines). Geomechanics, Computer modeling, Multiple-seam design.
Yi Luo, Ph.D. (WVU). Research. Subsidence, Mine health and safety, Mine ventilation.
Felicia Peng, Ph.D. (WVU). Coal preparation, Mineral processing, Computer applications, Environment.

Assistant Professor

Lloyd English, Ph.D. (WVU). Mine ventilation, Mine management, Mine health and safety.

Petroleum and Natural Gas Engineering

Professors

Samuel Ameri, M.S.Pet.E., P.E. (WVU). Chairperson. Formation evaluation.
Kashy Aminian, Ph.D. (U. Mich.). Natural gas engineering, Reservoir engineering.
Robert W. Chase, Ph.D. (Penn. St. U.). Adjunct. Natural gas engineering.
Thomas P. Meloy, Ph.D. (MIT). Petroleum engineering fundamental.
Shahab Mohaghegh, Ph.D. (Penn. St. U.). Reservoir simulation.

Associate Professor

H. Ilkin Bilgesu, Ph.D., P.E. (Penn. St. U.). Drilling and production engineering.

Extension and Outreach

Extension and Outreach is a unit within the College of Engineering and Mineral Resources that is composed of two programs: Mining extension and industrial extension.

Professor

Joseph C. Dorton, B.S. (Concord C.). Mine foreman training, Electrical training, Mandatory miner training courses.

Associate Professors

Robert L. Halstead, B.S. (U. Charleston, WV). *Emeritus.*
Thomas L. Savage, B.S. (Cornell U.). *Emeritus.*

Extension Agents

Mark A. Adkins, B.S. (WV Inst. of Tech.). Mine foreman training, Mandatory miner training, Mining methods, Underground and surface power systems.

Thomas A. Bailey, B.S.I.E., P.E. (Ohio St. U.). Quality assurance, Systems, Environmental planning and waste reduction, New production technologies, Technology transfer.

James M. Dean, M.S.E.M. (WVU). Director. Mine management, Mine safety and health, Initial miner training.

Cindy H. Decker, B.S. (LSU). Product design, Industrial marketing, Inventory control, Production efficiency, Quality systems, Sales management.

Lawrence D. Dixon, M.S.C.S.E., P.E. (WV Graduate Coll.), B.S.E.M. (WVU), B.S.E.E. (WVIT). Energy conversion, Energy conversion devices, Efficient energy usage, Digital control systems, Cellular manufacturing.

Thomas W. Hall, B.S. (Fairmont St. Coll.). Mine foreman training, Mandatory miner training, Mining methods.

Ronald L. Harris, B.S. (Bluefield St. Coll.). Mandatory miner training, Safety and health management, Contractor safety.

Tom Mahoney, B.A., M.A. (Davidson, Johns Hopkins U.). Associate director. Application of science, technology, and policy to enhance the effectiveness of economically productive activities worldwide.

John D. Martin, B.S. (Berea C). Mine fires, Firefighting equipment, Surface and underground fire training.

Raymond D Neupert, B.S.I.E., P.E. (WVU). Technology development, Quality management systems, Cellular manufacturing, Strategic planning, Cost control.

Joseph E Spiker, M.S. (WVU). Coal mining operations, Safety and health management, Education administration.

Ireland B. Sutton, B.S. (WV Tech). Surface mine blasting, Underground and surface power systems, Mandatory miner training

College of Human Resources and Education

Educational Psychology

Professors

Benjamin H. Bailey, Ed.D. (U. Fla.). *Emeritus.*

William L. Deaton, Ph.D. (U. Kansas). Applied statistical analysis, Research design, Measurement.

Daniel E. Hursh, Ph.D. (U. Kansas). Developmental and child psychology, Instructional and environmental design, Applied behavior analysis.

Rogers McAvoy, Ph.D. (Ind. U.). *Emeritus.*

Anne H. Nardi, Ph.D. (WVU). Developmental psychology, Problem solving, Adult learning.

Meng Shu Tseng, Ed.D. (Ind. U.). *Emeritus.*

Julie S. Vargas, Ph.D. (U. Pitt.). Instructional design, Behaviorology, B.F. Skinner's life and works, Verbal behavior.

Richard T. Walls, Ph.D. (Penn. St. U.). Educational psychology, Human learning, Memory, Problem solving, Vocational rehabilitation.

Associate Professor

Floyd L. Stead, Ed.D. (WVU). Educational psychology, Human learning, Educational measurement, evaluation, and research.

Assistant Professors

Thomas M. Bell, Ph.D. (W. Mich. U.). Adjunct. Adult cognitive behavior therapy, Clinical consultation and supervision, Therapist training.

Patricia Haught, Ed.D. (WVU). Adult cognitive development, Learning strategies, Educational psychology, Medical education, and Learning and development

Susan M. Rodman, Ed.D. (WVU). Adjunct. Computer and information systems, Statistical methods.

Floyd K. Russell, Ed.D. (WVU). Adjunct. Computer-based instruction, Hypertext, Multi-media Distance learning, Instructional design.

Neal Shambaugh, Ph.D. (Va. Tech.). Instructional design, Instructional technology integration, Cognition, Professional development.

Social and Cultural Foundations

Professors

Franklin Parker, Ed.D. (G. Peabody TC). *Emeritus.*

Mary I. Yeazell, Ed.D. (U. Ill.). *Emerita.*

Associate Professors

Van O. Dempsey III, Ph.D. (U.N.C.). Social foundations of education, Qualitative research methodology, Teacher education, Teacher professionalism.

Samuel F. Stack, Jr., Ph.D. (U. S. Carolina). History, Philosophy, Sociology of education, Educational theory, Comparative and international education.

Visiting Assistant Professor

Jaci Webb-Dempsey, Ph.D. (U.N.C.). Qualitative research and evaluation methodology. Social contexts of learning. Educational policy, School reform, Action research.

Special Education

Professors

Thomas P. Lombardi, Ed.D. (U. Az.). *Emeritus.*
Barbara L. Ludlow, Ed.D. (WVU). Severe/profound handicaps, Clinical supervision, Early intervention.
Gabriel A. Nardi, Ph.D. (U. Wisc.). Behavioral disabilities, Mental retardation.
Luise B. Savage, Ed.D. *Emerita.*
Diane T. Woodrum, Ed.D. (WVU). *Emerita.*

Associate Professors

Elizabeth Dooley, Ed.D. (WVU). Chairperson. Mental retardation, Learning disabilities, Multicultural/education.

Assistant Professors

Katherine Mitchen, Ph.D. (U. of Utah). Behavioral disorders.
Ann Richards, Ph.D. (U. of Az.). Learning disabilities.

Visiting Instructors

Kalie Kossar, M.Ed. (Ca. of Pa.). Clinical supervision.

Speech Pathology and Audiology

Professors

Carolyn P. Atkins, Ed.D. (WVU). Speech pathology. Speech improvement, Clinical supervision.
Mary Ellen Tekieli Koay, Ph.D. (U. Okla.). Speech pathology. Cleft palate, Neurophysiology, Neuropathologies, Clinical supervision.
Norman J. Lass, Ph.D. (Purdue U.). Speech pathology. Speech perception, Speech acoustics.
Dennis M. Ruscello, Ph.D. (U. Az.). Speech pathology. Language, Articulation, Clinical supervision.
Kenneth O. St. Louis, Ph.D. (U. Minn.). Speech pathology. Fluency, Voice, Clinical supervision.
Charles M. Woodford, Ph.D. (Syracuse U.). Audiology. Audiological evaluation, Industrial and environmental audiology, Clinical supervision.

Associate Professors

Conrad Lundeen, Ph.D. (U. Iowa). Audiology. Aural rehabilitation, Central auditory disorders, Clinical supervision.
Linda I. Shuster, Ph.D. (Ohio St. U.). Speech pathology. Neurogenic communication disorders, Speech perception, Speech acoustics.

Assistant Professors

Lynn R. Cartwright, Ed.D. (WVU). Speech pathology. Parent involvement, Clinical supervision.
Robin R. Jones, M.S. (WVU). Audiology. Aural rehabilitation, Clinical supervision.
Cheryl L. Prichard, Ed.D. (WVU). Speech pathology. Public school clinical programs, Rural education, Clinical supervision.

Clinical Assistant Professor

Karen Barr Haines, M.S. (WVU). Speech pathology. Augmentative communication, Clinical supervision.

Instructor

Gayle B. Neldon, M.S. (WVU). Audiology, Amplification, Clinical supervision.

Teacher Education

Professors

Marilyn Fairbanks, Ed.D. (WVU). *Emerita.*
Mary E. Haas, Ed.D. (Ind. U.). Social studies education, Geographic education, Global education.
Boyd D. Holtan, Ed.D. (U. Ill.). *Emeritus.*
Elizabeth F. Howard, Ph.D. (U. of Pitt.). *Emerita.*
Ronald V. Iannone, Ed.D. (Syracuse U.). Creative drama, Aesthetic education, Alternative education.
Layle D. Lawrence, Ph.D. (LSU). Adjunct. Secondary agricultural education, Youth organization, Extension education.
Roy A. Moxley, Ph.D. (U. Mich.). Early childhood education, Early literacy, Educational technology.
C. Kenneth Murray, Ph.D. (Ohio St. U.). Social studies education, Economic education, Teacher behavior.
Patricia A. Obenauf, Ed.D. (U. Va.). Curriculum development, Science education, Conceptual models.
Steven D. Rinehart, Ed.D. (WVU). Literacy education, Clinical reading, Reading difficulties.
Patricia K. Smith, Ed.D. (WVU). *Emeritus.*

Associate Professors

Judy Abbott, Ph.D. (U. Tx.). Literacy education, Children's writing, Motivation, Children's literature.
W. Scott Bower, Ph.D. (Ohio St. U.). Teaching strategies, Curriculum development, Teacher effectiveness.
Ardeth M. Deay, Ph.D. (Cornell U.). Classroom organization and management, Rural women in education, Peace education.
Stacy A. Gartin, Ph.D. (Ohio St. U.). Adjunct, Adult agricultural education, Communications, Leadership development, Teaching methods.
Kerry S. Odell, Ph.D. (Ohio St. U.). Adjunct. Research methodology, Microcomputer applications, Teaching methods.
Perry D. Phillips, Ed.D. (WVU). Director, Center for Professional Preparation and Practice. Social studies education, Teacher education.
Eric Pyle, Ph.D. (U. of Ga.). Science education, Motivation/social cognition, Earth science education, Research methodology.

James Rye, Ph.D. (Penn. St. U.). Science concept learning, Science technology society education, Human nutrition and health education.
Joy F. Saab, Ed.D. (WVU). Childhood, Creative arts.
Randall L. Wiesenmayer, Ph.D. (Penn. St. U.). Science education, Science technology society (sts) education, Environmental education.

Assistant Professors

Michael A. Caruso, M.A. (WVU). *Emeritus.*
Barbara Mertins, M.S.L.S. (Syracuse U.). *Emerita.*
Elizabeth Poe, Ph.D. (U. of Colo.).
Allison Swan, Ph.D. (U. of Pitt.). Professional development, Adolescent reading, Reading specialist.

Davis College of Agriculture, Forestry, and Consumer Sciences

Division of Animal and Veterinary Sciences

Professors

Robert A. Dailey, Ph.D. (U. Wisc.). Reproductive physiology.
Rosemary R. Haggett, Ph.D. (U. Va.). Physiology and reproductive biology.
E. Keith Inskeep, Ph.D. (U. Wisc.). Reproductive physiology.
Hillar Klandorf, Ph.D. (Br. Coun. Nat'l. Academic). Nutrition, Physiology.
Paul E. Lewis, Ph.D. (WVU). Director. Reproductive physiology.
William E. Vinson, Ph.D. (Iowa St. U.). Associate director, Animal genetics, Dairy science.
Wayne R. Wagner, Ph.D. (Colo. St. U.). Extension specialist. Animal breeding and genetics.
John Warren, Ph.D. (U. of Md.). Reproductive physiology.

Associate Professors

P. Brett Kenney, Ph.D. (Kans. St. U.). Food science.
Phillip I. Osborne, Ph.D. (Clemson). Extension specialist. Livestock marketing and production.
Richard W. Russell, Ph.D. (Iowa St. U.). Animal nutrition.

Assistant Professors

Kenneth P. Blemings, Ph.D. (U. Wisc.). Nutritional biochemistry.
June DeGraft-Hanson, Ph.D. (U. of Md.). Extension specialist. Poultry science.
Jacek Jaczynski, Ph.D. (Ore. St. U.). Muscle food safety.
Joseph S. Moritz, Ph.D. (Kans. St. U.). Poultry science.
Robert E. Pitts, D.V.M. (LSU). Veterinary science. Veterinarian.
Matthew E. Wilson, Ph.D. (Iowa St. U.). Reproductive Physiology.

Research Instructor

Darron L. Smith, M.S. (Colo. St. U.). Animal production.

Adjunct Faculty

Robert L. Cochrane, Ph.D. (U. Wisc.).
William K. Hershberger, Ph.D. (Penn. St. U.). Genetics.
Ann Hubbs, Ph.D., D.V.M. (Colo. St. U., Tx. A&M U.).
Eric K. Johnson, Ph.D. (U. of Wisc.). Mechanical aerospace engineering.
Charles G. Linton, Jr., D.V.M. (Miss. St. U.).
Kerry S. Odell, Ph.D. (OSU). Agricultural education.
Dale W. Porter, Ph.D. (WVU).
Caird E. Rexroad III, Ph.D. (Tx. A&M U.). Genetics.
George R. Seiler, D.V.M. (U. Fla.).
Kenneth J. Semmens, Ph.D. (Auburn U.). Aquaculture.
Alfred H. Stiller, Ph.D. (U. Cinn.). Chemistry.
Richard Z. Woodworth, M.S. (WVU). Agriculture.

Faculty Emeriti

Gerald C. Anderson, Ph.D. (U. Mo.).
William E. Collins, Ph.D. (U. Wisc.). Reproductive physiology.
Leslie Dozsa, D.V.M. (C. Vet. Med. Budapest).
William H. Hoover, Ph.D. (Penn. St. U.). Animal nutrition.
Donald J. Horvath, Ph.D. (Comell U.).
Norman O. Olson, D.V.M. (Wash. St. U.).
Ronald A. Peterson, Ph.D. (Mich. St. U.). Nutritional physiology-poultry.
Edward C. Prigge, Ph.D. (U. Maine). Animal nutrition.
Robert L. Reid, Ph.D. (Aberdeen U.).
Paul M. Smith, M.S. (WVU). Food sciences.
Roy O. Thomas, Ph.D. (Mich. St. U.).
James A. Welch, Ph.D. (U. Ill.).

Division of Family and Consumer Sciences

Child Development and Family Studies

Professors

Wanda K. Franz, Ph.D. (WVU). Human and cognitive development, Parenting, Family life certification.
Carol Markstrom, Ph.D. (Utah St. U.). Social context of families and individuals, Adolescent development, Ethnicity.
Barbara G. Warash, Ed.D. (WVU, Fla. St. U.). Director, Child Development Laboratory (Nursery School). Preschool curricula, Emergent literacy development, Preschool computer usage.

Assistant Professor

Dottie D. Rauch, M.Ed. (Penn. St. U.). Family studies, Family resource management.

Human Nutrition and Foods

Associate Professor

Marian B. Liddell, Ed.D. (WVU). Curriculum, Instruction, Supervision, Communication.

Assistant Professor

Cindy W. Fitch, Ph.D. (Case Western Reserve U.). Pediatric and clinical nutrition.

Visiting Assistant Professors

Claudia S. Schopper, M.S., R.D. (Auburn U.). Normal and clinical nutrition.
Kathleen T. Timperman, M.S. (U. Ill.). Food science, Human nutrition and dietetics.

Instructor

Betty A. Forbes, M.A., R.D. (WVU). Normal, community, and clinical nutrition.

Interior Design

Assistant Professors

Cindy V. Beacham, Ph.D. (VPI & SU). Design for children, Intergenerational design, Interior design pedagogy, Design for special needs.
William H. Hagerty, M.A. (WVU). Design theory, Perspective, Space planning, Lighting, Residential design.

Textiles, Apparel, and Merchandising

Professor

Nora M. MacDonald, M.S. (Iowa St. U.). Apparel design, Clothing for special needs, Fashion merchandising.

Associate Professor

Janice I. Yeager, M.S. (U. Ill.). Director. Textile science, Textiles for interiors, Fashion merchandising.

Assistant Professor

John B. Jacob, Ph.D. (VPI & SU). Social and psychological aspects of dress, Apparel industry and design, Costume history, Ethics in global society.

Visiting Assistant Professor

Dilia Lopez-Gydosh, M.S. (Ohio St. U.). Historic costumes and textiles, Ethnic dress, Collection management/ exhibition.

Adjunct Faculty

Monica Andis, M.S. (WVU).
Claudia Asvestos, M.S. (WVU).
Guendoline Brown, Ph.D. (Utah St. U.).
Alan Ducatman, M.D. (Waynes St. U.).
Hazel A. Hiza, Ph.D. (Howard U.).
Debra Krummel, Ph.D. (Penn. St. U.).
Larry LeFlore, Ph.D. (Fla. St. U.).
Xiaoming Li, Ph.D. (U. Minn.).
Anne MacBride, M.S. (WVU).
Ranjit K. Majumder, Ph.D. (U. Okla.).
Patricia Mulkeen, Ph.D. (Penn. St. U.).
Charlotte Nath, Ed.D. (WVU).
Laura Savio, M.S. (WVU).
Briane Turley, Ph.D. (U. of Va.).
Diane Williams, Ph.D. (WVU).
Mary Ellen Zeppuhar, Ed.D. (WVU).
Melinda Zook-Weaver, M.S. (Case Western Reserve U.).

Faculty Emeriti

Gladys R. Ayersman
Babette Graf
Mary K. Head
Mary Rose Jones
M. Zafar Alam Nomani
Betty Lou Ramsey
John A. Schultz
Carl B. Taylor

Division of Forestry

Professors

Ray R. Hicks, Jr., Ph D. (SUNY). Forest management. Forest ecology. Forest pest management.
Robert C. Whitmore, Ph.D. (B. Young U.). Wildlife management. Avian ecology, Quantitative ecology.

Associate Professors

James P. Armstrong, Ph.D. (SUNY). Wood science. Physical behavior of wood, Hardwood drying.
Mary Ann Fajvan, Ph.D. (U. Maine). Forest management. Silviculture.
William N. Grafton, M.S.F. (WVU). Extension specialist. Wildlife.
Kyle J. Hartman, Ph.D. (U. of Md.). Wildlife and fisheries ecology.
Elemer M. Lang, Ph.D. (CPI & SU). Wood science. Wood mechanics, Wood-based compositematerials.
Steven W. Selin, Ph.D. (U. Ore.). Recreation and parks. Tourism development.

Assistant Professors

James T. Anderson, Ph.D. (Tx. Tech. U.). Wildlife ecology and management.
Robert B. Anderson, Ph.D. (Va. Tech). Primary and secondary wood processing.
Kelly S. Bricker, Ph.D. (Penn. St. U.). Recreational parks.
John R. Brooks, Ph.D. (Penn. St. U.). Forest biometrics.
Benjamin E. Dawson-Andoh, Ph.D. (U. Brit. Col.). Wood science. Wood chemistry, Wood preservation.
John W. Edwards, Ph.D. (Clemson U.). Endangered species ecology and management, Forest wildlife/habitat relationships.
David W. McGill, Ph.D. (Penn. St. U.). Extension specialist.
Todd J. Petty, Ph.D. (U. of Ga.). Fisheries and stream ecology.
Chad D. Pierskalla, Ph.D. (U. of Minn.). Wildland recreation management and policy.
Anthony C. Tomkowski, M.S.F. (WVU). Forest management. Fisheries, Forestry, Forest water quality.
Jingxin Wang, Ph.D. (U. of Ga.). Forest operations and management.
Carolyn Ward, Ph.D. (Va. Tech.). Recreation and parks.

Adjunct Faculty

Jack Cromer, M.S.W. (U. Mich.). Wildlife management.
Steve Fausel, B.S. (Truman St. U.). Wildlife management.
Mark Ford, Ph.D. (U. Ga.). Wildlife management.
Kurt Gottschalk, Ph.D. (Mich. St. U.). Forest management.
F. Joseph Margraf, Ph.D. (Tx. A&M U.). Fisheries science, Ecology.
Patricia M. Mazik, Ph.D. (Memphis St. U.). Fisheries.
Gary W. Miller, Ph.D. (VPI & SU).
Rose-Marie Muzika, Ph.D. (Mich. St. U.). Forest management.
Henry C. Smith, M.S.F. (Purdue U.). Silviculture.
Mark Twery, Ph.D. (Yale U.). Forest management.
Stuart Welsh, Ph.D. (WVU). Fisheries.
Petra B. Wood, Ph.D. (U. Fla.). Wildlife ecology.

Faculty Emeriti

Eugene C. Bammel, Ph.D. (Syracuse U.).
Kenneth L. Carvell, D. Fore. (Duke U.).
Franklin C. Cech, Ph.D. (Tx. A&M U.).
John R. Hamilton, Ph.D. (N.C. St. U.).
Joseph M. Hutchison, Jr., M.S. (WVU).
Norman D. Jackson, M.W.T. (N.C. St. U.).
William E. Kidd, Jr., M.S.F. (VPI & SU).
Edwin D. Michael, Ph.D. (Tx. A&M U.)
David E. Samuel, Ph.D. (WVU).
Robert L. Smith, Ph.D. (Cornell U.).
Earl H. Tryon, Ph.D. (Yale U.).
David E. White, Ph.D. (SUNY).
Harry V. Wiant, Jr., Ph.D. (Yale U.).
William L. Wylie, M.S. (WVU).

Division of Plant and Soil Sciences

Professors

James W. Amrine, Jr., Ph.D. (Iowa St. U.). Entomology. Medical entomology, Apiculture, Biological control.
Barton S. Baker, Ph.D. (WVU). Director, Plant and Soil Sciences. Agronomy, Forage crops.
John A. Balasko, Ph.D. (U. Wisc.). Agronomy. Forage crops.
John F. Baniecki, Ph.D. (U. Az.). Extension. Plant pathology. Plant disease identification and control.
Alan R. Biggs, Ph.D. (Penn. St. U.). Plant pathology. Tree fruits.
Gary K. Bissonnette, Ph.D. (Mont. St. U.). Environmental microbiology. Aquatic microbiology.
William B. Bryan, Ph.D. (Iowa St. U.). Agronomy. Pastures.
Linda Butler, Ph.D. (U. Ga.). Entomology. Forest entomology, Pest management, Lepidoptera.
Cameron R. Hackney, Ph.D. (N.C. St. U.). Dean and director. Food safety, Environmental microbiology.
Henry W. Hogmire, Ph.D. (Mich. St. U.). Entomology. Tree fruit entomology, Integrated pest management.
William L. MacDonald, Ph.D. (Iowa St. U.). Plant pathology. Forest and shade tree diseases.

Joseph B. Morton, Ph.D. (Mont. St. U.). Plant pathology. Mycorrhizal interactions, Field crop diseases.
Joginder Nath, Ph.D. (U. Wisc.). Genetics. Cytogenetics, Evolution, Mutagenesis.
John C. Sencindiver, Ph.D. (WVU). Agronomy. Soil science, Soil genesis and classification, Acid mine drainage/ mine land reclamation.
Jeffrey Skousen, Ph.D. (Tx. A&M U.). Agronomy. Soil science, Land reclamation.
Richard K. Zimmerman, Ph.D. (WVU). Extension. Plant sciences, conservation.

Associate Professors

James B. Kotcon, Ph.D. (U. Wisc.). Plant pathology.
Daniel Panaccione, Ph.D. (Purdue U.). Mycology, Plant pathology.
Alan J. Sexstone, Ph.D. (Mich. St.). Environmental microbiology, Soil microbiology.

Assistant Professors

Jededian Doelling, Ph.D. (Wash. U.). Genetics, Molecular biology.
Louis McDonald, Ph.D. (U. Ky.). Soil chemistry.
Sven Verlinden, Ph.D. (Perdue U.). Horticulture.

Adjunct Faculty

Michael Glenn, Ph.D. (Ore. St. U.). Soil science.
Frank W. Glover, Jr., B.S. (WVU). Agronomy.
Stephen S. Miller, Ph.D. (WVU). Horticulture.
Tong-Man Ong, Ph.D. (Ill. St. U.). Genetics.
Paul F. Ziemkiewicz, Ph.D. (U. Br. Col.).
Thomas van der Zwet, Ph.D. (LSU). Plant pathology.

Faculty Emeriti

Robert E. Anderson, Ph.D. (U. Wisc.).
Bradford C. Bearce, Ph.D. (U. Calif.). Horticulture. Florist and nursery crops.
James L. Brooks, Ph.D. (U. Calif.).
Edward S. Elliott, Ph.D. (WVU).
Mannon E. Gallegly, Jr., Ph.D. (U. Wisc.).
L. Morris Ingle, Ph.D. (Purdue U.).
Walter J. Kaczmarczyk, Ph.D. (Hahnemann Med. C.).
Robert F. Keefer, Ph.D. (Ohio St. U.).
Oscar E. Schubert, Ph.D. (U. Ill.).
Rabindar N. Singh, Ph.D. (VPI & SU).
Charles B. Sperow, Jr., M.S. (WVU).
William VanEck, Ph.D. (Mich. St. U.).
Robert J. Young, Ph.D. (Ore. St. U.).
Roger S. Young, Ph.D. (Mich. St. U.).

Division of Resource Management

Agricultural and Environmental Education

Professors

Stacy A. Gartin, Ph.D. (Ohio St. U.). Communications, Program planning, Leadership development, Teaching methods.
Layle D. Lawrence, Ph.D. (LSU). Social science research, Curriculum development, Teaching methods, Extension education.

Associate Professor

Kerry S. Odell, Ph.D. (Ohio St. U.). Research methodology, Microcomputer applications, Teaching methods.

Assistant Professor

Harry N. Boone Jr. (Ohio St. U.). Computing technology, Teaching methods, Social science research.

Instructor

Sanjay B. Shah, Ph.D. (VPI & SU). Environmental engineering, Soil and water engineering, Nutrient management.

Agricultural and Resource Economics

Professors

Gerard E. D'Souza, Ph.D. (Miss. St. U.). Production economics, Finance.
Jerald J. Fletcher, Ph.D. (U. Cal.). Resource economics.
Tesfa Gebremedhin, Ph.D. (Okla. St. U.). Farm management, Agribusiness.
Walter C. Labys, Ph.D. (U. Nottingham). Mineral and energy economics.
Tim T. Phipps, Ph.D. (U. Cal.). Resource economics, Agricultural policy.
Peter V. Schaeffer, Ph.D. (U. Southern Cal.). Director. Regional science, Applied microeconomics.
Dennis K. Smith, Ph.D. (Penn. St. U.). Associate dean. Rural development, Agribusiness management.

Associate Professor

Alan R. Collins, Ph.D. (Ore. St. U.). Resource economics.

Assistant Professors

Cheryl Brown, Ph.D. (U. Cal. Bk.). Agricultural policy, Resource economics, Agribusiness.
Randall Rosenberger, Ph.D. (Colo. St. U.). Environmental and regional economics.
Mark Sperow, Ph.D. (Colo. St. U.). Production and resource economics.

Landscape Architecture

Professor

George W. Longenecker, M.F.A. (U. Ill.). Plant identification, Planting design.

Associate Professors

Donald R. Armstrong, M.L.A. (Iowa St.). Site design, Design implementation.
Steven B. McBride, M.L.A. (U. Mass.). Landscape construction, Site design.
Charles B. Yuill, M.L.A. (U. Mass.). Computer applications, Site analysis.

Assistant Professors

Stuart Echols, Ph.D. (VPI).
Hala Nassar, Ph.D. (Ain Shams U.).

Professors Emeriti

P. Vernon Armbrester, M.S. (WVU).
Alfred L. Barr, Ph.D. (Okla. St. U).
Dale K. Colyer, Ph.D. (U. Wisc.).
Robert G. Diener, Ph.D. (Mich. St. U.).
Gerald V. Eagan, Ph.D. (U. Tenn.).
Robert Jack, Ph.D. (Penn. St. U.).
Warren G. Kelly, Ed.D. (U. Mo.).
Marion L. Kimmons, Ph.D. (U. Mo.).
Wesley Lynch, M.S. (Mich. St. U.).
O. Claude McGhee, Ph.D. (Penn. St. U.).
Kenneth D. McIntosh, Ph.D. (U. Wisc.).
Ernest J. Nesius, Ph.D. (Iowa St. U.).
Paul E. Nesselroad, Ph.D. (Penn. St. U.).
Virgil J. Norton, Ph.D. (Ore. St. U.).
Ronald L. Stump, M.S. (WVU).
Mary E. Templeton, M.S. (WVU).
Delmar R. Yoder, Ph.D. (U. Wisc.).

Eberly College of Arts and Sciences

Africana Studies Program

Faculty Associates

Katherine Bankole, Ph.D. (Temple U.). Assistant professor, History, Africana Studies program, Women's Studies. Director, Center for Black Culture.
Gwen Bergner, Ph.D. (Princeton U.). Assistant professor, English.
Amos J. Beyan, Ph.D. (WVU). Associate professor, History.
Theresa Davis, M.F.A. (Va. Commonwealth U.). Associate professor, Division of Theatre and Dance.
Sandra Dixon, Ph.D. (Brown U.). Assistant professor, Foreign languages.
Elizabeth A. Dooley, Ed.D. (WVU). Assistant professor, Educational theory and practice.
Tesfa Gebremedhin, Ph.D. (Okla. St. U.). Professor, Resource management.
Elizabeth Iglesias, Ed.D. (Penn. St. U.). Assistant professor, Counseling psychology and rehabilitation.
Calvin Masilela, Ph.D. (VPI and SU). Assistant professor, Geography.
Robert Maxon, Ph.D. (Syracuse U.). Professor and chair, History.
Florita Montogomery, Ed.D. (WVU). Associate professor, Extension.
Nichelle Perkins, J.D. (U. Iowa). Professor, Extension.
Jose V. Pimienta-Bey, Ph.D. (Temple U.). Assistant professor, History and Africana studies.
Judith A.M. Scully, J.D. (George Wash. U.). Associate professor, College of Law.
Reuben Simoyi, Ph.D. (Brandeis U.). Professor, Chemistry.
Ethel Smith, M.A. (Hollins Coll.). Assistant professor, English.
Janice Spleth, Ph.D. (Rice U.). Professor, Foreign languages.
Daniel Weiner, Ph.D. (Clark U.). Associate professor, Geography. Director, International programming.
Christopher Wilkinson, Ph.D. (Rutgers U.). Associate professor, Music.
Paschal Younge, Ph.D. (WVU). Assistant professor, Music.
Eboni Zamani (U. Ill.). Assistant professor, Education.

Biology

Professors

Charles H. Baer, Ph.D. (U. of Md.). *Emeritus.*
David F. Blaydes, Ph.D. (Ind. U.). *Emeritus.*
Melvin L. Brown, Ph.D. (WVU). Adjunct. Systematic botany.
Roy B. Clarkson, Ph.D. (WVU). *Emeritus.*
William E. Collins, Ph.D. (U. of Wisc.). *Emeritus.*
John Hall, Adjunct Professor. *Emeritus.*
Edward C. Keller, Jr., Ph.D. (Penn. St. U.). Science education for students with disabilities.
Gerald E. Lang, Ph.D. (Rutgers U.). Provost. Plant ecology. Biogeochemistry, Wetland ecology.
James B. McGraw, Ph.D. (Duke U.). Plant ecology, Population biology.

Richard P. Sutter, Ph.D. (Tufts U.). *Emeritus.*
Mark R. Walbridge, Ph.D. (U.N.C.). Chair, Wetland ecology, Biogeochemistry, Urban ecosystems.
John D. Weete, Ph.D. (U. of Houston). Associate provost for research. Botany, Physiology, Microbiology, Biochemistry.
Robert C. Whitmore, Ph.D. (B. Young U.). Adjunct. Ornithology, Wildlife management.
Paul Ziemkiewicz, Ph.D. (U. of British Columbia). Adjunct. Plant ecology, Restoration biology.

Associate Professors

Ashok Bidwai, Ph.D. (Utah St. U.). Protein kinases in yeast and drosohila.
Clifton P. Bishop, Ph.D. (U. of Va.). Developmental biology, Molecular biology of drosophila.
Jonathan Cumming, Ph.D. (Cornell U.). Environmental plant physiology, Mycorrhizae and plant stress.
Dorothy C. Dunning, Ph.D. (Tufts U.). *Emeritus.* Animal behavior, Neurophysiology, Invertebrate biology.
Jorge A. Flores, Ph.D. (George Wash. U.). Molecular biology of reproduction.
Ramsey H. Frist, Ph.D. (U. of Pitt.). *Emeritus.* Cellular and molecular biology, Virology, Electron microscopy.
Keith Garbutt, Ph.D. (U. of Wales). Director, University Honors program. Population genetics, Ecological genetics.
Roland B. Guthrie, Ph.D. (WVU). *Emeritus.*
Philip E. Keeting, Ph.D. (Rutgers U.). Cellular and molecular biology, Bone cell, Differentiation, Growth factors.
Joseph A. Marshall, Ph.D. (U. of Md.). Animal behavior, Ichthyology, Aquaculture.
Ethel C. Montiegel, M.S. (WVU). *Emeritus.*
William Peterjohn, Ph.D. (Duke U.). Plant ecology, biogeochemistry.
Susan Studlar, Ph.D. (U. of Tenn.). Adjunct. Bryology and botany.
Richard Thomas, Ph.D. (Clemson U.). Physiological ecology.
Leah A. Williams, Ph.D. (WVU). *Emeritus.*

Assistant Professors

Ann L. Chester, Ph.D. (Duke U.). Assistant vice president, Health Sciences. Social justice, pre-college/college enhancement programs for disadvantaged students.
Christy Foran, Ph.D. (Cornell U.). Role of environmental factors in changes during development and adult plasticity in influencing reproductive physiology.
Marc Kantorow, Ph.D. (George Wash. U.). Molecular biology and biochemistry of the eye.
Kristine Krajnak, Ph.D. (Mich. St. U.). Cellular and molecular biology, Circadian rhythms and the effects of aging.
Keqiang Wu, Ph.D. (U. of Saskatchewan, Canada). Functional genomics and regulation of gene expression—functional analysis of novel transcription factors in plants.

Clinical Associate Professors

Donna Ford-Werntz, Ph.D. (Wash. U.). Herbarium curation, Plant systematics, Population biology, Evolution, Phytogeography, Phylogenetics.
Cynthia D. Huebner, Ph.D. (Miami U.). Adjunct. Invasive species.

Chemistry

Professors

Harry O. Finklea, Ph.D. (Calif. Inst. Tech.). Chairperson. Analytical/physical chemistry, Properties of organized monolayers deposited on electrodes. Gas phase sensors.
George A. Hall, Ph.D. (Ohio St. U.). *Emeritus.*
Fred L. King, Ph.D. (U. Va.). Analytical chemistry, Mass spectrometry, Trace elements, Gas-phase in chemistry.
Denis W. H. MacDowell, Ph.D. (MIT). *Emeritus.*
William R. Moore, Ph.D. (U. Minn.). *Emeritus.*
Chester W. Muth, Ph.D. (Ohio St. U.). *Emeritus.*
Robert S. Nakon, Ph.D. (Tx. A&M U.). Bioinorganic chemistry, Chelates, Catalysis.
Jeffrey L. Petersen, Ph.D. (U. Wisc.). Associate chairperson. Physical inorganic chemistry, Transition metal complexes, X-ray diffraction.
Kenneth Showalter, Ph.D. (U. Colo.). Bennett Distinguished Professor. Physical chemistry, Chemical kinetics, Multistability and oscillating systems.
Reuben H. Simoyi, Ph.D. (Brandeis U.). Fast reaction kinetics, Nonlinear dynamics in chemistry, Chemical chaos.
Kung K. Wang, Ph.D. (Purdue U.). Organic chemistry, Stereoselective synthesis, Natural products.
Anthony Winston, Ph.D. (Duke U.). *Emeritus.*

Associate Professors

Terry Gullion, Ph.D. (William and Mary). Physical chemistry, Solid state NMR, Biological materials, Polymers.
Charles Jaffe, Ph.D. (U. Colo.). Theoretical chemistry, Molecular dynamics, Nonlinear mechanics.
John H. Penn, Ph.D. (U. Wisc.). Organic chemistry, Photochemistry, Electron transfer.
Ronald B. Smart, Ph.D. (U. Mich.). Environmental analytical chemistry, Electrochemistry, Trace metals, Coal chemistry.
Björn Söderberg, Ph.D. (Royal Inst. of Tech., Sweden). Organic synthesis using transition metals.
Alan M. Stolzenberg, Ph.D. (Stanford U.). Inorganic chemistry, Bioinorganic chemistry, Organometallic chemistry.

Assistant Professors

Lisa Holland, Ph.D. (U.N.C.). Micro-separations, High throughput drug screening.
George O'Doherty, Ph.D. (Ohio St.). Carbohydrate and natural product synthesis.
Aaron Timperman, Ph.D. (U. of Ill.). Proteomics, Separations.

Communication Studies

Professors

Melanie Booth Butterfield, Ph.D. (U. Missouri). Interpersonal, nonverbal, health, and instructional communication.
Joan S. Gorham, Ed.D. (Northern Ill. U.). Instructional, nonverbal, and mass media.
Donald Klopf, Ph.D. (U. Wash.). *Emeritus.*
James C. McCroskey, Ed.D. (Penn. St. U.). Communication avoidance, Instructional communication, Interpersonal and organizational communication.
Virginia P. Richmond, Ph.D. (U. Neb.). Interpersonal, organizational, nonverbal, and instructional communication.

Associate Professors

Matthew M. Martin, Ph.D. (Kent St. U.). Chair. Interpersonal and family communication, Personality differences and argumentation.
Brian R. Patterson, Ph.D. (U. of Okla.). Interpersonal, Communication theory, Communication and Development.
Enid J. Portnoy, Ed.D. (WVU). *Emeritus.*
Walter H. Rockenstein, Ph.D. (Northwestern U.). *Emeritus.*
John D Shibley, Ph.D. (Ohio St. U.). Film appreciation, Communication and nonviolence.

Assistant Professors

Theodore A. Avtigis, Ph.D. (Kent St. U.). Organizational. Personality. Family
Rebecca M. Chory-Assad, Ph.D. (Mich. St. U.). Persuasion, Mass media.
Scott A. Myers, Ph.D. (Kent St. U.). Instructional. Small group. Interpersonal.
Keith Weber, Ed.D. (WVU). Instructional communication, Research methods.

Computer Science

Professors

John M. Atkins, Ph.D. (U. Pitt.). Design of database management systems, Analysis of algorithms, Mathematics of computation.
Walton W. Cannon, Ph.D., P.E. (U. Ill.). *Emeritus.*
Mohammad A. Choudhry, Ph.D. (Purdue U.). Power system control, DC transmission, Stability.
Wils L. Cooley, Ph.D., P.E. (Carnegie Mellon U.). Associate chairperson. Biomedical engineering, Electronics, Design.
Parviz Famouri, Ph.D. (U. Ky.). Analysis and control of electromechanical systems, Power electronics.
Ali Feliachi, Ph.D. (Ga. Tech.). Large-scale systems, Adaptive control, Power systems.
David G. Frazer, Jr., Ph.D. (Penn. St.). Ph.D. (WVU). Adjunct. Lung physiology, Instrumentation.
D. Michael Henry, Ph.D. (TCU). Databases, Cryptography, Neural networks.
Franz X. Hiergeist, Ph.D. (U. of Pitt.). Mathematics of computation.
Lawrence A. Hornak, Ph.D. (Rutgers U.). Optics, VLSI, Integrated Optics, Microstructures.
Ronald L. Klein, Ph.D. (U. Iowa). Automatic control, Estimation theory, System identification, Power systems.
Powsiri Klinkhachorn, Ph.D. (WVU). Microprocessor applications, Computer architecture, Binary and non-binary logic.
Ali Mili, Ph.D. (U. of Ill.). Adjunct. Software engineering.
Wayne A. Muth, Ph.D. (Iowa St. U.). *Emeritus.*
Roy S. Nutter, Jr., Ph.D., P.E. (WVU). Electric vehicles, Neural networks, Micro-processor systems, Computer architecture.
Y. V. Ramana Reddy, Ph.D. (WVU). Artificial intelligence, Knowledge-based simulation, Computer graphics.
George E. Trapp, Ph.D. (Carnegie Mellon U.). Chairperson. Numerical analysis, Mathematical programming, Network models.
Jeffrey Voas, Ph.D. (Coll. of William and Mary). Adjunct. Software engineering.

Associate Professors

Hany H. Ammar, Ph.D. (U. Notre Dame). Modeling and evaluation of parallel and distributed systems performance and dependability.
Biswajit Das, Ph.D. (Purdue). Electronic and photonic devices.
William H. Dodrill, M.S. (Columbia U.). *Emeritus.*
V. Jagannathan, Ph.D. (Vanderbilt U.). Distributed intelligent systems, Internet and security technologies.
Mark A. Jerabek, Ph.D., P.E. (Purdue U.). Acoustics, Ultrasonic tomography, Electromagnetics.
Robert L. McConnell, Ph.D. (U. Ky.). Digital electronics, Electronic instrumentation, Power control, Design.
James D. Mooney, Ph.D. (Ohio St. U.). Associate chairperson. Operating systems, Computer architecture, Software portability.
Afzel Noore, Ph.D. (WVU). Associate dean for academic affairs. Fault-tolerant computing, Design for testability, VLSI design and testing, Software engineering, Consumer electronics.
Frances L. Van Scoy, Ph.D. (U. Va.). Programming languages and compilers, Software engineering, Parallel processing.

Assistant Professors

Donald A. Adjeroh, Ph.D. (Chinese U. of Hong Kong). Multimedia information systems (images, video, and audio), Distributed multimedia systems.
Bojan Cukic, Ph.D. (U. Houston). Software reliability assessment, High assurance systems, Program transformation.
Elaine M. Eschen, Ph.D. (Vanderbilt U.). Design and analysis of algorithms, Graph theory, Combinatorics.
Katerina Goseva-Popstojanova, Ph.D. (U.Sv. Kiril I Metodij). Software reliability engineering, Fault-tolerant systems, computer security, dependability, performance and performability, Modeling and evaluation.

Takamitsu Kawai, M.S. (Nagoya U.). Visiting. Virtual reality, Computer graphics, Computer music.
Dimitris Korakakis, Ph.D. (Boston U.). Research. Semiconductor growth, Nanotechnology, Wide bandgap semicon ductor devices, Photonic devices, Semiconductor alloys and heterostructures, Bio-sensors.
Timothy Menzies, Ph.D. (U. New South Wales, Australia). Research. Software engineering, Artificial intelligence.
Supratik Mukhopadhyay, Ph.D. (U. of Saarland). Computer aided verification, Program analysis, Software engineering, Logics of knowledge, Database theory, Artificial intelligence, Set constraints.
Daryl Reynolds, Ph.D. (Tx. A&M U.). Research. Satistical signal processing for communications, Multiuser detection, Space-time coding and processing, Iterative (turbo) processing, Call, access, and power control for multiuser detection, Transmitter precoding.
Stephanie Caswell Schuckers, Ph.D. (U. Mich.). Adjunct. Biometrics, Bio-engineering, Systems and signals.
Mark Shereshevsky, Ph.D. (U. of Warwick, UK). Research dynamical systems, Chaos theory, Cellular automata, Information theory, Neural networks.
K. Subramani, Ph.D. (U. of Md.). Design and analysis of algorithms, Complexity, Combinatorics.
Matthew C. Valenti, Ph.D. (Va. Tech.). Communication theory, Wireless systems, Error control coding.

Research Associate Professors

Srinivas Kankanahalli, Ph.D. (New Mexico St. U.). Research. All aspects of computer security, Security related to storage and file systems.
Sumitra Reddy, Ph.D. (WVU). Healthcare informatics, Componentware, Intelligent systems, Information technology evaluation.

Lecturers

Vic Baker, M.S.C.S. (WVU). Virtual reality.
Camille Hayhurst, M.S.C.S. (WVU). Software development/engineering, Database.
Rebecca Littleton, M.S.C.S. (WVU). Design and development of multimedia, instructional, web-based systems.
Todd Montogomery, M.S.E.E. (WVU). Communication protocols, Fault-tolerant systems, Network security.
Cynthia D. Tanner, M.S.C.S. (WVU). Software development software engineering.

Economics

Professors

Donald R. Adams, Jr., Ph.D. (U. Penn.). American economic history, European economic history, Economic development.
Vance Q. Alvis, Ph.D. (U. Va.). *Emeritus.*
Ronald J. Balvers, Ph.D. (U. of Pitt.). Financial economics, Macroeconomic theory.
Lewis C. Bell, Ph.D. (U. Ky.). *Emeritus.*
Robert D. Britt, Ph.D. (U. Colo.). *Emeritus.*
Thomas Campbell, Ph.D. (U. of Pitt.). *Emeritus.*
Victor Chow, Ph.D. (U. Ala.). Adjunct. Corporate finance, Portfolio management, Microeconomics.
Jerald J. Fletcher, Ph.D. (U. Cal.). Adjunct. Resource economics.
Clifford B. Hawley, Ph.D. (Duke U.). Labor economics, Microeconomic theory, Econometrics.
Ming-jeng Hwang, Ph.D. (Tx. A&M U.). General theory, Urban and regional economics, Mathematical economics.
Kern O. Kymn, Ph.D. (U. Chicago). General theory, Mathematical economics, Econometrics.
Walter C. Labys, Ph.D. (Nottingham U.). Adjunct. Resource economics, Econometric modelling, Trade and development.
Patrick C. Mann, Ph.D. (Ind. U.). Industrial organization, Public utility regulation, Water supply.
Douglas Mitchell, Ph.D. (Princeton U.). Monetary theory, Macroeconomics theory.
Tim T. Phipps, Ph.D. (U. Cal. Davis). Adjunct. Agricultural economics, Resource economics.
William S. Reece, Ph.D. (Wash. U., St. Louis). Public economics, Econometrics.
Tom S. Witt, Ph.D. (Wash. U., St. Louis). Econometrics, Energy economics, Regional economics.

Associate Professors

Subhayu Bandyopadhyay, Ph.D. (U. Md.). International trade.
Sudeshna Bandyopadhyay, Ph.D. (U. Md.). Labor economics.
Brian J. Cushing, Ph.D. (U. Md.). Urban/regional economics, Poverty, Econometrics, Public finance.
Stratford M. Douglas, Ph.D. (U.N.C.). Econometrics, Industrial organization.
Russell S. Sobel, Ph.D. (Fla. St.). Public economics, Public choice.
William N. Trumbull, Ph.D. (U.N.C.). Public finance, Law and economics, Economics of crime, Applied microeconomics.

Assistant Professors

Santiago Pinto, Ph.D. (U. of Ill.). Public economics, Urban economics.
Royce J. Watts, M.S. (WVU). Statistics.

English Language and Literature

Professors

Timothy D. Adams, Ph.D. (Emory U.). American literature, Southern literature, Autobiography.
Dennis Allen, Ph.D. (U. Minn.). Critical theory, Prose fiction.
Sophia B. Blaydes, Ph.D. (Ind. U.). *Emerita.*
Philip Bordinat, Ph.D. (U. Birmingham, Eng.). *Emeritus.*
Patrick Conner, Ph.D. (U. Md.). Eberly College Centennial Professor in English. Old English literature, Anglo-Saxon studies, Paleography, Humanities computing.
Lloyd M. Davis, M.A. (Vanderbilt U.). *Emeritus.*
Richard B. Eaton, Ph.D. (U.N.C.). *Emeritus.*
William W. French, Ph.D. (U. of Pitt.). *Emeritus.*
Elaine K. Ginsberg, Ph.D. (U. Okla.). *Emerita.*
John H. Johnston, Ph.D. (U. Wisc.). *Emeritus.*
Robert Markley, Ph.D. (U. Penn.). Jackson Family Chair. Eighteenth century studies, Critical theory.
Thomas Miles, Ph.D. (SUNY). Rhetoric, Scientific and technical writing.
Kevin Oderman, Ph.D. (U. Cal.–Santa Barbara). Pound, H.D., Modern poetry, Literary essay.
Virgil L. Peterson, Ph.D. (UCLA). *Emeritus.*
John Racin, Jr., Ph.D. (Ohio St. U.). *Emeritus.*
Frank Scafella, Jr., Ph.D. (U. Chicago). *Emeritus.*
John F. Stasny, M.A. (Marquette U.). *Emeritus.*
Judith G. Stitzel, Ph.D. (U. Minn.). *Emerita.*
Cheryl Torsney, Ph.D. (U. Fla.). American literature, Women's writing, Literary theory.

Associate Professors

Gail Galloway Adams, M.A. (Tx. U.). Creative writing, American studies.
Rudolph P. Almasy, Ph.D. (U. Minn.). Renaissance and Reformation studies, Composition.
Laura Brady, Ph.D. (U. Minn.). Composition and rhetorical theory, Women's studies.
Arthur C. Buck, Ph.D. (U. Ark.). *Emeritus.*
Oreta H. Dawson, M.A. (WVU). *Emerita.*
Anna Shannon Elfenbein, Ph.D. (U. Nebr.). American literature, Women's studies, Southern literature, Black fiction, Popular culture.
Marilyn Francus, Ph.D. (Columbia). Restoration and eighteenth century literature.
Avery F. Gaskins, Ph.D. (Ind. U.). *Emeritus.*
W. Michael Grant, Ph.D. (Brown U.). *Emeritus.*
James Harms, M.F.A. (Ind. U.). Creative writing, Poetry.
Ellesa C. High, Ph.D. (Ohio U.). Appalachian literature, 20th century literature, Creative writing.
John Lamb, Ph.D. (NYU). Victorian literature, 19th century historiography.
Russell C. MacDonald, Ph.D. (U. Penn.). *Emeritus.*
Byron C. Nelson, Ph.D. (U. Wisc.). Seventeenth century literature, Literature and music.
Susan Shaw Sailer, Ph.D. (U. Wash.) *Emerita.*
Dorothy Sedley, M.A. (Sonoma St. C.). *Emerita.*
Aileen K. Shafer, M.A. (WVU). *Emerita.*
Ethel Morgan Smith, M.A. (Hollins Coll.). Creative writing, African American literature.
David Stewart, Ph.D. (Oxford). British romanticism, Literary theory.
Timothy Sweet, Ph.D. (U. Minn.). American studies, Literature and environment, Native American literature.
Barry Ward, Ph.D. (Ohio St. U.). Folklore, Medieval literature, American studies.
Hayden Ward, Ph.D. (Columbia U.). Victorian literature, Walter Pater.

Assistant Professors

Sandy Baldwin, Ph.D. (NYU). Digital/media poetics, Critical theory, Experimental literature.
Gwen Bergner, Ph.D. (Princeton U.). African-American literature, Ethnic studies.
Mark Brazaitis, M.F.A. (Bowling Green U.). Creative writing, Fiction.
Jonathan Burton, Ph.D. (CUNY). Shakespeare, Early modern literature, Post-colonial studies.
Nicholas G. Evans, Ed.D. (WVU). Associate dean for undergraduate education. Composition and language, British literature, Higher education law.
Lara Farina, Ph.D. (Fordham U.). Medieval literature and culture, History of sexuality and reading.
Winston Fuller, M.A. (U. Colo.). *Emeritus.*
Kirk Hazen, Ph.D. (U.N.C.). Linguistics.
Betty Jo Hypes, M.A. (WVU). *Emerita.*
Iris M. Jennings, M.A. (WVU). *Emerita.*
Adam Komisaruk, Ph.D. (UCLA). British Romanticisim, 18th century British literature.
Elizabeth Madison, Ph.D. (Ind. U.). Comparative literature, Modern fiction.
Margaret Racin, M.A. (WVU). English education, Feminist criticism, Composition.
Kathleen J. Ryan, Ph.D. (U.N.C. Greensboro). Composition Studies, Feminist and rhetorical theory.
Katy Ryan, Ph.D. (U. Mass.). 20th century American literature.
Mary Ann Samyn, M.F.A. (U. Va.). Creative writing, Poetry.
Julie Vedder, Ph.D. (Penn. St. U.). Professional writing, Rhetoric of science, Gender studies.
Lisa Weihman, Ph.D. (NYU). Modern British and Irish literature and culture.

Foreign Languages

Professors

Robert J. Elkins, Ph.D. (U. Kans.). German. Language methodology. *Emeritus.*
Victor J. Lemke, Ph.D. (U. Wisc.). German. *Emeritus.*
Kathleen McNerney, Ph.D. (U. N.M.). Spanish. Catalan language and literature, Spanish literature and culture.
Frank W. Medley, Jr., Ph.D. (Purdue U.). Spanish, Language methodology, Second language acquisition.
Armand E. Singer, Ph.D. (Duke U.). Spanish. *Emeritus.*
Janice Spleth, Ph.D. (Rice U.). French. Francophone literature and culture, 19th century French drama.
Harley U. Taylor, Jr., Ph.D. (Ind. U.). German. *Emeritus.*

Associate Professors

Maria Amores, Ph.D., (Penn. St. U.). Spanish, Foreign language acquisition.
Michel J. Beauchemin, M.A. (Brown U.). Seventeenth century French literature.
Marilyn Bendena, Ph.D. (Wayne St. U.). Russian literature/culture, Contemporary French novel.
Susan Braidi, Ph.D. (U. Del.) ESL, Applied linguistics, Second language acquisition, Syntax.
Jeffrey Bruner, Ph.D. (Rutgers U.). Chairperson. Spanish Golden Age, Contemporary Spanish literature, Commercial Spanish.
Axel Claesges, Ph.D. (Vanderbilt U.). German cultural and intellectual history, 19th century German literature, Commercial German. *Emeritus.*
Ahmed Fakhri, Ph.D. (U. Mich.). Second language acquisition, Applied linguistics, Discourse analysis.
Daniel Ferreras, Ph.D. (Mich. St. U.). Comparative Romance literature, French/Spanish 19th and 20th century novel, Theory of the fantastic.
Pablo Gonzalez, Ph.D. (U. Madrid). Spanish-American literature, Commercial Spanish.
Deborah Janson, Ph.D. German, 19th and 20th century literature.
Michael Lastinger, Ph.D. (U. Ga.). 19th century French literature, Critical theory.
Valerie Lastinger, Ph.D. (U. Ga.). 18th century French literature, French women writers.
Twyla Meding, Ph.D. (U. Va.). French, 17th century French literature.
Johann Seynnaeve, Ph.D. (Cornell U.). Sociolinguistics, Phonology, History of linguistics.
Sharon Wilkinson, Ph.D. (Penn. St. U.). French, Foreign language acquisition.

Assistant Professors

Cynthia Chalupa, Ph.D. (Ohio St. U.). Fin-de-siécle German and Austiran literature, Poetry, Foreign language pedagogy.
Sandra Dixon, Ph.D. (Brown U.). Spanish. Portuguese literature, Spanish-American literature.
Sandra Stjepanovic, Ph.D. (U. Conn.). Linguistics, Syntax, Psycholinguistics.

Geology and Geography

Professors

Robert E. Behling, Ph.D. (Ohio St. U.). Associate chair. Geomorphology.
Alan C. Donaldson, Ph.D. (Penn. St. U.). Sedimentation, Stratigraphy. *Emeritus.*
Gregory A. Elmes, Ph.D. (Penn. St. U.). Geographic information science.
Trevor M. Harris, Ph.D. (Hull U.). Chair. Geographic information science.
Milton T. Heald, Ph.D. (Harvard U.). Sedimentary petrology. *Emeritus.*
Randell Jackson Ph.D. (U. Ill.). Director Regional Research Institute. Economic.
Thomas W. Kammer, Ph.D. (Ind. U.). Centennial Professor. Paleontology.
Kenneth C. Martis, Ph.D. (U. Mich.). Associate chair. Political and historical geography.
M. Duane Nellis, Ph.D. (Oregon St. U.). Dean, Eberly College of Arts and Sciences. Geography, Remote sensing.
Henry W. Rauch, Ph.D. (Penn. St. U.). Hydrogeology, Geochemistry.
John J. Renton, Ph.D. (WVU). Geochemistry.
Robert C. Shumaker, Ph.D. (Cornell U.). Petroleum geology, Basin structures. *Emeritus.*
Richard A. Smosna, Ph.D. (U. Ill.). Carbonate sedimentation.
Daniel Weiner, Ph.D. (Clark U.). Director of International Programs. Regional development.
Thomas Wilson, Ph.D. (WVU). Geophysics.

Associate Professors

Joseph Donovan, Ph.D. (Penn. St. U.). Hydrogeology.
Robert Q. Hanham, Ph.D. (Ohio St. U.). Regional development.
J. Steven Kite, Ph.D. (U. Wisc.). Geomorphology.
Helen M. Lang, Ph.D. (U. Ore.). Mineralogy, Petrology.
Ann M. Oberhauser, Ph.D. (Clark U.). Regional development, Gender studies.
Timothy A. Warner, Ph.D. (Purdue U.). Remote sensing.

Assistant Professors

Kobena Hanson, Ph.D. (Queen's). Development planning.
Amy E. Hessl, Ph.D. (Arizona). Biogeography, Forest ecosystems.
Ge Lin, Ph.D. (Buffalo). Demography, Geographic information science.
Brent McCusker, Ph.D. (Mich. St.). Land use change, Africa.
Jamie Toro, Ph.D. (Stanford). Structural.
Dorothy Vesper, Ph.D. (Penn. St. U.). Geochemistry, Hydrogeology.

Adjunct Faculty

Katherine Lee Avary, M.S. (U.N.C.). Petroleum geology.
Beth Barnett, Ph.D. (U.N.C.). Medical geography.
Mary C. Behling, M.S. (U. Oh.). Computer statistics.
Katherine R. Bruner, Ph.D. (WVU). Petrology.
David J. Campagna, Ph.D. (Purdue). Remote sensing.
C. Blaine Cecil, Ph.D. (WVU). Coal geochemistry.
Michael Dougherty, Ph.D. (Va. Tech.). Local economic development.
Ken Fones-Wolf, Ph.D. (Temple U.). Labor relations.
William H. Gillespie, M.S. (WVU). Director, Forestry program for WV. Paleobotany.
William C. Grady, M.S. (WVU). Coal petrology.
Mary Haas, Ph.D. (Ind. U.). Geographic education.
Alison Hanham, M.A. (WVU). Community development.
Michael E. Hohn, Ph.D. (Ind. U.). Computer geology. WVGS.
Andrew Liebhold, Ph.D. (U. Calif. Berkeley). Environmental geology.
Ronald McDowell, Ph.D. (Colo. Sch. Mines). WVGS. Geochemist.
Dave Oldham, Ph.D. (WVU). Petroleum geology.
Douglas G. Patchen, Ph.D. (Syracuse U.). Petroleum geology.
Lizbeth Pyle, Ph.D. (U. Minn.). Rural/urban planning.
Carl J. Smith, M.S. (Ind. U.). Coal geology.
Larry D. Woodfork, M.S. (Ind. U.). Economic and environmental geology.
Paul Ziemkiewicz, Ph.D. (British Columbia). Mine land reclamation.

History

Professors

Robert E. Blobaum, Ph.D. (U. Nebr.). Eberly Family Distinguished Professor. Modern Central and Eastern Europe, Poland, Social and political.
William T. Doherty, Ph.D. (U. Mo.). *Emeritus.*
Jack L. Hammersmith, Ph.D. (U. Va.). Modern U.S., East Asia, U.S. diplomatic, U.S.-Japanese relations.
Emory L. Kemp, Ph.D. (U. Ill.). *Emeritus.*
Mortimer Levine, Ph.D. (U. Penn.). *Emeritus.*
Ronald L. Lewis, Ph.D. (U. Akron). Stuart and Joyce Robbins Chair. Modern U.S., West Virginia/ Appalachia, Labor and social history.
Robert M. Maxon, Ph.D. (Syracuse U.). Chairperson. East Africa, Colonial Kenya.
Stephen C. McCluskey, Ph.D. (U. Wisc.). Medieval, History of science, Astronomies of non-literate cultures.
Edward M. Steel, Jr., Ph.D. (U.N.C.). *Emeritus.*
John C. Super, Ph.D. (UCLA). Americas, Comparative religion.

Associate Professors

William S. Arnett, Ph.D. (Ohio St. U.). Ancient, Egyptology, Aging in ancient Middle East.
Elizabeth Fones-Wolf, Ph.D. (U. Mass.). 20th century U.S. social and economic.
Kenneth Fones-Wolf, Ph.D. (Temple U.). 19th century U.S., labor.
Gregory A. Good, Ph.D. (U. Toronto). History of science and technology, History of science in 19th and 20th century U.S. and Europe.
Barbara J. Howe, Ph.D. (Temple U.). Modern U.S., Women's studies, Urban.
Elizabeth K. Hudson, Ph.D. (Ind. U.). *Emerita.*
Mary Lou Lustig, Ph.D. (Syracuse U.). Early U.S., Colonial, Revolution, Constitution.
A. Michal McMahon, Ph.D. (U. Tx.). U.S., Urban, Technology and environment.
Mark Tauger, Ph.D. (UCLA). 20th century Russia/USSR, Historiography, World/comparative.
Steven M. Zdatny, Ph.D. (U. Penn.). Modern Europe, France, Social.

Assistant Professors

Katherine B. Aaslestad, Ph.D. (U. Ill.). Modern Europe, Germany, Cultural.
Katherine Bankole, Ph.D. (Temple U.). African-American, Health and medicine, Women.
Jason Parker, Ph.D. (U. Fla.). U.S. foreign relations, Recent U.S., Caribbean/Latin America.
Priscilla M. Shilaro, Ph.D. (WVU). Africa, West Africa, East Africa.
Mathew A. Vester, Ph.D. (UCLA). Early modern Europe, Italy.

Humanities

Associate Professor

Richard Montogomery, Ph.D. (U. Ill. Chicago). Coordinator, Philosophy.

International Studies

Joe D. Hagan, Ph.D. (U. Ky.). Director and advisor, Professor of political science.
Jamie E. Jacobs, Ph.D. (U. Pitt.). Advisor, Assistant professor of political science.
Kenneth C. Martis, Ph.D. (U. Mich.). Professor of geography.
John C. Super, Ph.D. (UCLA). Professor of history.
William N. Trumbull, Ph.D. (U.N.C). Associate professor of economics.

Mathematics

Professors

Ian Christie, Ph.D. (Dundee U.). Numerical partial differential equations.
Krzysztof Ciesielski, Ph.D. (Warsaw U.). Analysis, Topology, Set theory.
Harvey Diamond, Ph.D. (M.I.T.). Approximation theory, Applied mathematics.
Weifu Fang, Ph.D. (Claremont). Applied mathematics.
Harry Gingold, D.Sc. (Israel Inst. Tech.). Differential equations, Asymptotic methods.
John Goldwasser, Ph.D. (U. Wisc.-Madison). Combinatorics, Graph theory.
Jack T. Goodykoontz, Jr., Ph.D. (U. Ky.). Topology.
Henry W. Gould, M.A. (U. Va.). Combinatorics, Number theory, Special functions.
Harumi Hattori, Ph.D. (R.P.I.). Differential equations, Continuum mechanics.
Caulton L. Irwin, Ph.D. (Emory U.). Associate director, N.R.C.C.E. Variational methods, Optimization, Applied mathematics.
Alonzo Johnson, Ed.D. (Okla. St.). *Emeritus.*
Jin Bai Kim, Ph.D. (V.P.I. & S.U.). *Emeritus.*
Hong-Jian Lai, Ph.D. (Wayne St. U.). Graph theory, Matroid theory.
Dening Li, Ph.D. (Fudan U.). Partial differential equations.
Robert Mayes, Ph.D. (Kans. St. U.). Mathematics education.
Michael E. Mays, Ph.D. (Penn. St. U.). Number theory.
Sam B. Nadler, Jr., Ph.D. (U. Georgia). Topology, Functional analysis.
Sherman D. Riemenschneider, Ph.D. (Syracuse U.). Chair. Approximation theory, Wavelet theory.
William H. Simons, Ph.D. (C.M.U.). Analysis, Differential equations, Applied mathematics.
Joseph Wilder, Ph.D. (R.P.I.). Applied mathematics.
Yuesheng Xu, Ph.D. (Old Dominion U.). Integral equations, Wavelet theory.
Cun-Quan Zhang, Ph.D. (Simon Fraser U.). Graph theory, Combinatorics.

Associate Professors

Joy B. Easton, J.D. (WVU). *Emerita.*
Gary H. Ganser, Ph.D. (R.P.I.). Applied mathematics, Fluid mechanics.
Andrzej Karwowski, Ph.D. (Rutgers U.). Continuum mechanics.
Betty L. Miller, M.S. (WVU). *Emerita.*
James E. Miller, Ph.D. (U. Ky.). Complex analysis.
James E. Moseley, Ph.D. (Purdue U.). Partial differential equations, Modelling.
Jerzy Wojciechowski, Ph.D. (Cambridge U.). Combinatorics, Graph theory.

Assistant Professors

Edgar Fuller, Ph.D. (U. Ga.). Knot theory, Mathematics education.
Laura Pyzdrowski, Ed.D. (WVU). Mathematics education.

Philosophy

Professors

Ralph W. Clark, Ph.D. (U. Colo.). Ethics, Business ethics, Metaphysics.
Theodore M. Drange, Ph.D. (Cornell U.). *Emeritus.*
Henry Ruf, Ph.D. (Emory U.). *Emeritus.*
Mark Wicclair, Ph.D. (Columbia U.). Philosophy of law, Medical ethics, Ethics.

Associate Professors

Richard Montgomery, Ph.D. (U. Ill.–Chicago). Chairperson. Philosophy of mind/cognitive science, Philosophy of science.
Sharon Ryan, Ph.D. (U. Rochester). Epistemology.
Daniel Shapiro, Ph.D. (U. Minn.). Social and political philosophy, Ethics, Philosophy of law.

Assistant Professors

David Cerbone, Ph.D. (U.C. Berkeley). Continental philosophy (esp. Heidegger), Wittgenstein History of analytical philosophy.
Beverly Hinton, (Marquette U.). Ancient philosophy, Modern philosophy.

Adjunct Associate Professor

Jacqueline Glover, Ph.D. (Georgetown U.). Biomedical ethics. Department of Pediatrics, WVU School of Medicine.

Physics

Professors

Bernard R. Cooper, Ph.D. (U. Calif.). Claude Worthington Benedum Professor of Physics. Surface electronic structure, Rare earth magnetism, Theory.
Boyd F. Edwards, Ph.D. (Stanford U.). Fluid dynamics, Combustion processes, Percolation, Theory.
Martin V. Ferer, Ph.D. (U. Ill.). Phase transitions and critical phenomena, Theory.
Nancy C. Giles, Ph.D. (N.C. St. U.). Optical properties of semi-conductors, Experiment.
Larry E. Halliburton, Ph.D. (U. Mo.). Chairperson. Solid state, Magnetic resonance, Experiment.
Oleg Jefimenko, Ph.D. (U. Ore.). *Emeritus.*
Mark E. Koepke, Ph.D. (U. Md.). Plasma physics, Experiment.
Arnold D. Levine, Ph.D. (Columbia U.). *Emeritus.* Field theory.
John E. Littleton, Ph.D. (U. Rochester). Astrophysics, Nucleosynthesis, Theory, Experiment.
Thomas H. Myers, Ph.D. (N.C. St. U.). Growth and characterization of semiconductors, Experiment.

Arthur S. Pavlovic, Ph.D. (Penn. St. U.). *Emeritus.* Magnetic properties of solids, Experiment.
Carl A. Rotter, Ph.D. (Case West. Res. U.). Eberly Family Distinguished Professor. Neutro scattering, Ultrasonics, Experiment, Physics education.
Mohindar S. Seehra, Ph.D. (U. Rochester). Eberly Family Distinguished Professor. Magnetic, electronic, and optical properties of solids, Experiment.
Richard P. Treat, Ph.D. (U. Calif.). *Emeritus.* Aerosol physics, Experiment, Theory.
H. Arthur Weldon, Ph.D. (M.I.T.). Particle physics, Quantum fields, Theory.

Associate Professors

Wathiq Abdul-Razzaq, Ph.D. (U. Ill.–Circle Campus). Solid state physics, Experiment.
Stanley Farr, M.S. (WVU). *Emeritus.*
Leonardo Golubovic, Ph.D. (Belgrade U.). Condensed matter and statistical physics, Theory.
David Lederman, Ph.D. (U. Calif.). Magnetic and optical properties, Superlattices.
Earl E. Scime, Ph.D. (U. Wisc.). Plasma physics, Space science, Experiment.

Assistant Professor

Martina Bachlechner, Ph.D. (Johannes Kepler U.). Computational materials theory.

Research Associate Professor

Alan V. Barnes, Ph.D. (Cal. Tech.). Experimental high energy physics.

Research Assistant Professor

Ayyakkannu Mannivannan, Ph.D. (U. of Tokyo). Magnetic properties of materials.

Political Science

Professors

Orrin B. Conaway, Jr., Ph.D. (Syracuse U.). *Emeritus.*
Robert E. DiClerico, Ph.D. (Ind. U.). Eberly Professor of Teaching, American government, Presidency, Parties and electoral processes, Public policy (agenda setting).
Robert J. Dilger, Ph.D. (Brandeis U.). Inter-governmental relations, State politics.
Joe D. Hagan, Ph.D. (U. Ky.). International politics, Public policy (foreign policy).
Hong N. Kim, Ph.D. (Georgetown U.). Comparative politics (Asia).
Sophia L. Peterson, Ph.D. (UCLA). *Emerita.*
Gerald Pops, Ph.D. (Syracuse U.). Adjunct. Public administration.
Donley T. Studlar, Ph.D. (Ind. U.). Eberly Family Distinguished Professor of Political Science, Comparative politics, Women and politics, Anglo-American politics.
James B. Whisker, Ph.D. (U. Md.). Political theory, Comparative government.
David G. Williams, Ph.D. (SUNY–Albany). Adjunct. Public administration.
Rodger D. Yeager, Ph.D. (Syracuse U.). *Emeritus.*

Associate Professors

Neil Berch, Ph.D. (U. Wash.). State and local government, Public policy (economic policy), Policy evaluation.
Richard A. Brisbin, Jr., Ph.D. (John Hopkins U.). Public law, Judicial politics, Public policy (criminal justice, regulation).
Robert D. Duval, Ph.D. (Fla. St. U.). Methodology, Public policy (energy), International politics and policy.
Allan S. Hammock, Ph.D. (U. Va.). Chairperson. American government, Public policy (civil rights, health care).
Susan Hunter, Ph.D. (Ohio St. U.). Political theory, Policy evaluation. Public policy (environment).
John C. Kilwein, Ph.D. (Ohio St. U.). Public law, Public policy (general, law, and policy).
Kevin Leyden, Ph.D. (U. Iowa). American politics, Congress, Interest groups, Electoral behavior.
Jeffrey S. Worsham, Ph.D. (U. Wisc.). Public administration, Public policy (social welfare regulatory policy).

Assistant Professors

R. Scott Crichlow, Ph.D. (LSU). International politics, Foreign policy decision-making.
D. Lyn Dotson, J.D. (WVU). Adjunct. American government.
Lawrence J. Grossback, Ph.D. (U. Minn.). Methodology, American politics, Public policy (environment).
Jamie Jacobs, Ph.D. (U. of Pitt.). International relations, Public policy (environment), Latin American politics.
Christopher L. Plein, Ph.D. (U. Mo.). Adjunct. Public administration.

Psychology

Professors

Philip N. Chase, Ph.D. (U. Mass.). Verbal behavior, Organizational behavioral management.
Stanley H. Cohen, Ph.D. (Mich. St. U.). Quantitative methods, Social support systems, Program evaluation.
Philip E. Comer, Ph.D. (WVU). *Emeritus.*
Barry A. Edelstein, Ph.D. (Memphis St. U.). Eberly Family Distinguished Professor of Clinical Psychology. Clinical geropsychology, Anxiety and medical decision making in older adults.
William J. Fremouw, Ph.D. (U. Mass.). Cognitive-behavioral therapy, Forensic psychology.
Robert P. Hawkins, Ph.D. (U. Pitt.). *Emeritus.*
Daniel E. Hursh, Ph.D. (U. Kans.). Adjunct. Educational psychology, Personalized systems of instruction, Language evaluation.
Kevin T. Larkin, Ph.D. (U. of Pitt.). Cardiovascular reactivity and its implication in the development of cardiovascular disorders and anxiety-related problems.
Kennon A. Lattal, Ph.D. (U. Ala.). Centennial Professor. Animal learning and behavior, Issues in the history and philosophy of psychology, Human-pet relations.

Joseph Panepinto, Ph.D. (WVU). Adjunct. Community psychology, Program evaluation.
Michael Perone, Ph.D. (U. Wisc.–Milwaukee). Chairperson. Positive and negative reinforcement, Experimental analysis of verbal behavior, Research methodology.
Hayne W. Reese, Ph.D. (U. Iowa). *Emeritus.*
Joseph R. Scotti, Ph.D. (SUNY–Binghamton). Eberly Family Professor of Outstanding Public Service. Stress and trauma, Standards of practice, Disabilities.
James N. Shafer, Ph.D. (Ohio St. U.). *Emeritus.*
Beth Sulzer-Azaroff, Ph.D. (U. Minn.). Adjunct. Applied behavior analysis.
Richard T. Walls, Ph.D. (Penn. St. U.). Adjunct. Educational psychology, Human learning, Vocational rehabilitation.

Associate Professors

Christina D. Adams, Ph.D. (LSU). Pediatric psychology, Clinical assessment, Attention deficits and hyperactivity in adolescence.
Andrew S. Bradlyn, Ph.D. (U. Miss.). Adjunct. Pediatric behavioral medicine, Child behavior therapy and assessment.
Edward C. Caldwell, Ph.D. (Syracuse U.). *Emeritus.*
Irving J. Goodman, Ph.D. (U. Rochester). *Emeritus.*
Carole V. Harris, Ph.D. (U. Fla.). Adjunct. Child and adolescent behavior therapy, Adolescent substance abuse, Pediatric behavioral medicine.
Katherine Karraker, Ph.D. (Mich. St. U.). Adults' perceptions of infants, Infant social development, Infant stress and coping, Infant temperament, Infant assessment.
John C. Linton, Ph.D. (Kent U.). Adjunct. Behavioral medical psychology, Crisis intervention.
Cheryl B. McNeil, Ph.D. (U. Fla.). Disruptive behavior disorders of children, Assessment, Parent-child interactions.
Daniel W. McNeil, Ph.D. (U. of Ala.). Experimental psychopathology, Behavioral dentistry and behavioral medicine, Clinical research training and clinical supervision.
Tracy L. Morris, Ph.D. (U. Miss.). Associate chair. Peer relationships, Social anxiety, Internalizing disorders in children, Parent-child interactions.
J. Vernon Odom, Ph.D. (U.N.C.). Adjunct. Study of abnormal and normal visual development.
B. Kent Parker, Ph.D. (U. Utah). Stimulus control, memory, and complex sequential learning in animals, Research design.

Assistant Professors

Cynthia Anderson, Ph.D. (WVU). Assessment and treatment of challenging behavior, Interventionoutcomes in applied settings.
Martin Boone, Ph.D. (Okla. St. U.). Adjunct. Behavioral medicine, Clinical neuropsychology.
David Brunetti, Ph.D. (Okla. St. U.). Adjunct. Individual and group psychotherapy, Psychological assessment, Forensic evaluation.
Lindsey L. Cohen, Ph.D. (U. of Ga.). Pediatric psychology and child health, Coping of children, parents, and medical staff during painful pediatric procedures.
Bruce Corsino, Ph.D. (Fl. Inst. of Tech.). Adjunct. Ethics and psychology, Informed consent, End-of-life treatment issues.
Jeffrey Hammond, Ph.D. (U.S. International U.). Adjunct. Supervision, Forensic psychology, Psychotherapy.
Jennifer Haut, Ph.D. (U. of N.D.). Adjunct. Behavioral medicine, Neuropsychology.
Marc Haut, Ph.D. (U. of N.D.). Adjunct. Behavioral medicine, Neuropsychology.
Deborah Jones, Ph.D. (U. of Ga.). Family mental and physical health, especially women andadolescent children from culturally diverse and economically disadvantaged groups.
Jody Kashden, Ph.D. (WVU). Adjunct. Healthsouth Mountainview Regional Rehabilitation Hospital.
Alfred L. Kasprowicz, Ph.D. (U. of Pitt.). Adjunct. Behavioral medicine, Psychophysiology.
James P. LePage, Ph.D. (U. of Houston). Adjunct. Inpatient treatment.
Jennifer Margrett, Ph.D. (Wayne St. U.). Cognitive development in adulthood and aging,Collaborative learning, Everyday problem solving.
Neil L. Mogge, Ph.D. (Gregory Peabody Coll.). Adjunct. Inpatient treatment.
Ruth Ann Panepinto, Ph.D. (WVU). Adjunct. Community psychology.
Julie Hicks Patrick, Ph.D. (U. of Akron). Decision-making. Caregiving issues related to chronic mental illness and retardation, Non-traditional family constellations.
Matthew H. Scullin, Ph.D. (Cornell U.). Child cognitive and social development; Eyewitness memoryand suggest ibility in children, Social factors and intelligence.
Brian H. Sharp, Ph.D. (WVU). Adjunct. Clinical neuropsychology and rehabilitation, Traumatic brain injury.
Julie Smith, Ph.D. (WVU). Adjunct. Organizational performance systems, Innovation and creativity, Training systems.
Thomas J. Spencer, Ph.D. (WVU). Adjunct. Organizational behavior management.
Jeannie Sperry, Ph.D. (Ohio U.). Adjunct. Factors associated with successful placement and improvement of psychiatric inpatients, Ethical decision in psychotherapy.
JoNell Strough, Ph.D. (U. Utah). Collaborative problem solving, Peer relationships, Gender issues.
Mark D. Weist, Ph.D. (Va. Polytechnic Inst. and St. U.). Adjunct. School-based mental health services.
Leslie Wilk, Ph.D. (W. Mich. U.). Adjunct. Organizational behavior management, Performance management and leadership.
Christina Sara Wilson, Ph.D. (Wayne St. U.). Adjunct. Clinical neuropsychology, Dementia, Head injury.

Religious Studies

Associate Professor

Richard Montgomery, Ph.D. (U. Ill., Chicago). Director. Philosophy.

Assistant Professor

Aaron Gale, Ph.D. (Northwestern U.). New testament studies.

Slavic Studies

Marilyn Bendena, Ph.D. (Wayne St. U.). Associate professor of foreign languages.
Robert E. Blobaum, Jr., Ph.D. (U. Neb.). Professor of history.
Johan Seynnaeve, Ph.D. (Cornell U.). Associate professor of foreign languages.
Mark B. Tauger, Ph.D. (UCLA). Associate professor of history.

Social Work

Professors

Marjorie H. Buckholz-Cleveland, Ph.D. (WVU). *Emerita.*
Karen V. Harper-Dorton, Ph.D. (Ohio St. U.). Social administration, Child welfare.
Nancy L. Lohmann, Ph.D. (Brandeis U.). Social administration, Research measurement.
Roger Lohmann, Ph.D. (Brandeis U.). Nonprofit management, Rural social services.
Robert A. Porter, Ph.D. (Brandeis U.). *Emeritus.*
Victor L. Schneider, Ph.D. (U. Mich.). *Emeritus.*
LeRoy G. Shultz, M.S.W. (Wash. U.). *Emeritus.*

Associate Professors

Eleanor Blakely, Ph.D. (U.N.C.). Social welfare policy/administration, Poverty.
Barry L. Locke, Ed.D. (WVU). Social work in rural areas, Generalist practice, Program development.
Virginia Majewski, Ph.D. (U. of Pitt.). Chair and M.S.W. Program director. Poverty and American Indianissues.
Caroline T. Mudd, M.S.W. (U. Penn.). *Emerita.*
Neal A. Newfield, Ph.D. (Tx. Tech. U.). Strategic therapy, Hypnosis, Solution focused therapy.
Elizabeth Randall, Ph.D. (U. Ga.). Clinical social work, Mental health.
Joan E. Saltman, Ph.D. (U. of Md.). Human behavior, Family social work, Multicultural issues.

Assistant Professors

Linda Ferrise, M.S.W. (WVU). B.S.W. Director. Clinical social work, Mental health, Adoption.
Doris Nicholas, Ed.D. (WVU). Social work in health care, AIDS/HIV, Multicultural practice.
Dong Pil Yoon, Ph.D. (U. Ill.). Child welfare, adoption, research, and statistics.

Instructors

R. Larry Beckett, M.S.W. (WVU). Director, off-campus program. Social planning and health care policy.
Helen (Linda) Hagerty, M.S.W. (U. Pitt.). Coordinator of field Instruction.

Academic Professionals

Suzanne Leizear, M.S.W. (WVU). Continuing education director.
Brenda Morgan-Patrick, M.S.W. (WVU). Admissions coordinator and advising specialist.

Sociology and Anthropology

Professors

Ronald C. Althouse, Ph.D. (U. Minn.). Sociology. Theory, Work, Occupational safety and health.
Jiri T. Kolaja, Ph.D. (Cornell U.). Sociology. *Emeritus.*
John D. Photiadis, Ph.D. (Cornell U.). Sociology. *Emeritus.*
Leonard M. Sizer, Ph.D. (U. Iowa). Sociology. *Emeritus.*
Jerold M. Starr, Ph.D. (Brandeis U.). Sociology. Life course, Social movements, Sociology of knowledge.

Associate Professors

S. Melissa Latimer, Ph.D. (U. Ky.). Sociology. Gender/race/ethnicity, Inequality, Work labor markets.
Lawrence T. Nichols, Ph.D. (Boston Coll.). Sociology. Criminology, Theory, Business.
Ann L. Paterson, Ph.D. (Mich. St. U.). Sociology. Education, Sex roles, Socialization.
Patricia C. Rice, M.A. (Ohio St. U.). Anthropology. Prehistoric art, Physical, Archeology.
John F. Schnabel, Ph.D. (U. Notre Dame). Sociology. *Emeritus.*
Joseph J. Simoni, Ph.D. (U. Notre Dame). Sociology. Community, Ethnic relations, Health communication.
William I. Torry, Ph.D. (Columbia U.). Anthropology. Economic development, Ecology, Africa.

Assistant Professor

James Nolan III, Ph.D. (Temple U.). Sociology. Criminal justice, Psychoeducational processes.

Statistics

Professors

Erdogan Gunel, Ph.D. (SUNY–Buffalo). Bayesian inference, Biostatistics, Categorical data analysis.
E. James Harner, Ph.D. (Cornell U.). Chairperson. Dynamic graphics, Statistical computing, Statistical modeling, Statistical education.
Edwin C. Townsend, Ph.D. (Cornell U.). *Emeritus.* Experimental design, Regression analysis.
Stanley Wearden, Ph.D. (Cornell U.). *Emeritus.* Biostatistics, Statistical genetics, Population biology.

Research Professor

Harshinder Singh, Ph.D. (Panjab U.). Order-restricted statistical inference, Applied probability and reliability, Categorical data analysis.

Associate Professors

Daniel M. Chilko, M.S. (Rutgers U.). Statistical computing, Computer graphics.
Gerald R. Hobbs, Jr., Ph.D. (Kans. St. U.). Biostatistics, Nonparametric statistics, Regression analysis.

Assistant Professor

Robert Mnatskanov, Ph.D. (Moscow Inst. of Electronics and Mathematics). Change-point problems, Estimation of probability density, Mixture models, Statistical inverse problems.

Adjunct Associate Professor

James T. Wassell, Ph.D. (Ohio St. U.). Biostatistics, Survival analysis, Nonparametric statistical methods.

Research Associates

Anthony A. Billings, M.S. (WVU). Statistical computing, Statistical modeling, Robust estimation, Nonlinear dynamic systems.
Desta Fekedulegn, Ph.D. (WVU). Ecological modeling, Nonlinear regression analysis, Multivariatemodeling, Biostatistics, Biometry, Statistical consulting.

Women's Studies

Associate Professor

Barbara J. Howe, Ph.D. (Temple U.). Director. Women's history, Women's studies.

Assistant Professor

Elizabeth S.D. Engelhardt, Ph.D. (Emory). Women's studies.

Faculty Associates

Over 100 faculty members at all ranks from nearly all of the University's departments, schools, and colleges are affiliated with the Center for Women's Studies through their teaching, research, and service. Contact the center for a current list.

Perley Isaac Reed School of Journalism

Ogden Newspapers Endowed Visiting Professor

George Esper, Honorary Ph.D. (WVU). Reporting, Writing on deadline, Feature writing, War correspondence.

Shott Chair in Journalism Professor

Terry Wimmer, Ph.D. (U.N.C. at Chapel Hill). New media, Research.

Associate Professors

Ralph E. Hanson, Ph.D. (Ariz. St. U.). Reporting, Ethics, Mass communication.
Christine M. Martin, M.A. (U. Md.). News and feature writing, Journalism history.
R. Ivan Pinnell, Ph.D. (U. Denver). Public relations.
Maryanne Reed, M.S.J. (Northwestern U.). Broadcast journalism, Journalism history, Documentary.
Pamela D. Yagle, M.S.J. (WVU). Reporting, Editing, Language skills, High school publications.

Assistant Professors

Joel Beeson, B.A. (U. Mo.). Visual communications.
Robyn Blakeman, M.L.A. (Southern Methodist U.). Advertising layout and design, Integrated marketing communications certificate program (on-line).
Phylissa Mitchell, J.D. (Washington & Lee U.). Broadcast journalism, Law.
Archie Sader, M.B.A. (Columbia). Direct marketing, Campaigns, Integrated marketing communications.
John Temple, M.F.A. (U. Pitt.). News and feature writing, Immersion journalism.

Visiting Assistant Professor

Paul Burger, M.B.A. (Loyola). Copywriting, Media, Introduction to advertising, Integrated marketingcommunications.

Clinical Instructors/Lecturers

Mary R. Furbee, M.S.J. (WVU). Editorial, Critical and feature writing, Children's nonfiction.
Julie Cryser, B.S.J. (WVU). Reporting, Editing.

Instructors

Pam S. Hanson, B.A. (Iowa St.). News and feature writing, Contemporary women's fiction.

Professors Emeriti

Paul A. Atkins, M.A. (U. Va.).
John H. Boyer, Ph.D. (U. Mo.).
Charles F. Cremer, Ph.D. (U. Iowa).
Harry W. Elwood, M.S. (Northwestern U.).
Robert M. Ours, Ph.D. (Coll. of William & Mary).
William O. Seymour, M.A. (E. Tx. St. U.).
Guy H. Stewart, Ph.D. (U. Ill.). Dean.
William R. Summers, Jr., M.A. (U. Mo.).

Adjunct Instructors

Andrew G. Fusco, J.D. (WVU). Journalism law, Freedom of information, First Amendment issues.
Charles Harman, M.S.J. (WVU). Public relations.
Joe Long, B.S.J. (WVU). Public relations.
Jeff Ray, J.D. (WVU). Journalism law, Freedom of information, First Amendment issues.
Lynn Reinke, M.A. (U. of Md.). Mass communications, Distance learning.
Gloria Ruane, B.A. (Penn. St. U.). Journalism, Psychology, Copyediting.
Paul Sunyak, M.A. (Point Park Coll.). Investigative reporting.

School of Dentistry *See the WVU Health Sciences Center Catalog*

School of Medicine

Community Medicine

Professors

Bill Carlton, Ed.D. (U. of Tenn.).
Alan Ducatman, M.D. (Wayne St. U.), M.Sc. (City U. of NY and Mt. Sinai Sch.of Med., NY), Department chair.
George A. Kelley, D.A. (Middle Tenn. St. U.).
John Pearson, M.B., M.A. (Cambridge U.), M.P.H. (Yale U.). Community medicine, *Emeritus.*
Ian R. H. Rockett, Ph.D. (Brown U.), M.P.H. (Harvard U.). Associate chair, Director of educational programs.
Peter Shaffon, Ed.D. (WVU).

Associate Professors

David K. Brown, Ph.D. (WVU).
Geri Dino, Ph.D., M.S. (Kans. St. U). Interim director, Prevention Research Center.
Edward J. Doyle, Jr., M.D. (George Washington U. Sch. of Med.), M.Sc. (U. of Southern Calif.). Clinical director, Institute of Occupational and Environmental Health.
Gerry Hobbs, Ph.D., M.S. (Kans. St. U.). Community medicine/statistics.
Syed Islam, Dr.P.H. (U. Mich.), M.B.B.S. (Medical Coll. of Bangladesh), M.P.H. (U. of Ala.). Institute of Occupational and Environmental Health.
Debra Krummel, Ph.D. (Penn. St. U), M.S. (Case Western Reserve U.). Prevention Research Center.
William E. Reger, Ed.D. (WVU).
Kenneth J. Simon, Ed.D., M.S. (Columbia U).

Assistant Professors

Cathy Coyne, Ph.D. (Johns Hopkins U.), M.P.H. (Boston U.).
Karen K. Douglas, Ph.D. (Tx. Woman's U.). *Emerita.*
Ruth Turner Goins, Ph.D. (U. of Mass.).
Ruth Kershner, Ed.D. (WVU).
Christopher Martin, M.D. (U. of Edmonton, Canada). Institute of Occupational and Environmental Health.
Priscah Mujuru, M.P.H. (Boston U.). Institute of Occupational and Environmental Health.
Robert P. Pack, Ph.D., M.P.H. (U. of Ala.).
Judith Sedgeman, M.A. (Trinity Coll.). Adjunct assistant professor.
Irene Tessaro, Dr. P.H. (U.N.C.).

Department of Human Performance and Applied Exercise Science

Exercise Physiology

Professors

Irma Ullrich, M.D. (U. Minn.). Diabetes and exercise, Obesity, Osteoperosis.
Rachel A. Yeater, Ph.D. (WVU). Chair. Heart disease prevention, Cardiac rehabilitation.

Associate Professors

Stephen Alway, Ph.D. (McMaster U.). Muscle physiology aging.
Randall W. Bryner, Ed.D. (WVU). Reproductive physiology, Exercise and immune function.
Kevin Gilson, Ed.D. (WVU). Athletic performance, Swimming.
Paul M. Gordon, Ph.D. (U Pitt.). Epidemiology.
W. Guyton Hornsby, Ph.D. (LSU). Diabetes and exercise, Strength and conditioning.

Assistant Professors

Danny Bonner, M.S. (WVU). Adult fitness/athletic training.
Paula Briggs, M.S. (WVU). Aquatic therapy.

Occupational Therapy

Assistant Professors

Robert Chetlin, M.S. (WVU).
Anne Cronin, Ph.D., OTR/L. (U. Fla.).
Bernadette Hattjar, M.Ed., OTR/L (Penn. St. U.).
Randy P. McCombie, Ph.D., OTR/L (Loyola U. of Chicago). Chair.
Diana Middleton, B.S., OTR/L. (U. of Western Mi.).
Melanie Posch, B.S., OTR/L. (U. of Penn.).
Amanda Kessler Rogers, B.S., OTR/L. (Coll. Misericordia).
Nilima Tanna, B.Sc., O.T., OTR/L. (U. of Bombay, India).
Stephen D. Wheeler, M.Ed., OTR/L. (U. of Toronto).

Medical Technology

Anna August, B.S. (I.U.P.). Adjunct assistant professor, Immunology.
Lou Ann Bailey, M.B.A. (WVU). Adjunct instructor.
Cathy Browning, B.S. (WVU). Adjunct assistant professor, Management.
Joyce Compton, M.S. (WVU). Adjunct assistant professor.
Patsy Fairchild, B.S. (WVIT). Adjunct instructor, Summersville Memorial Hospital, Summersville, WV, Clinical teaching.
Barbara J. Gutman, M.Ed. (U. Pitt.). Associate professor, Immunohematology and blood banking.
Sharon Hall, B.S. (WVU). Adjunct Instructor, Hematology.
Jean D. Holter Ed.D., (WVU). Professor, Management and education, Clinical microscopy.
Beverly Kirby, M.A. (WVU). Rural health coordinator, Assistant professor, Hematology, Clinical microscopy.
Mary Ellen Koenn, M.S. (WVU). Associate professor, Chemistry and instrumentation.
Karen S. Long, M.S. (WVU). Associate professor, Microbiology and immunology.
Marie Miller, B.S. (WVU). Adjunct Instructor, Microbiology.
Patricia A. Miller-Canfield, M.D. (U. of Louisville). Assistant professor, Hemostasis and coagulation.
Dane W. Moore, Jr., M.S. (WVU). Professor emeritus, Microbiology.
Judy Mull, M.S. (WVU). Adjunct assistant professor, Research.
Deborah Randant, B.S. (WVIT). Adjunct instructor, Boone Memorial Hospital, Madison, WV, Clinical teaching.
Dennis Sites, B.S. (WVU). Adjunct instructor, Preston Memorial Hospital, Kingwood, WV, Clinical teaching.
Debby Taniguchi, B.S. (U. Ut.). Adjunct Instructor, Microbiology.

School of Nursing

* Regular graduate faculty, # Associate graduate faculty, + Clinical track appointment

Professors

*E. Jane Martin, Ph.D., R.N., F.A.A.N., C.S. (U. Pitt.). Dean.
Gaynelle McKinney, M.S.N.Ed., R.N., F.A.A.N. (Ind. U.). *Emerita.*
*Mary Jane Smith, Ph.D., R.N. (NYU). Associate dean for graduate academic affairs.
*Janet Wang, Ph.D., R.N., F.A.A.N. (U. Pitt.).

Associate Professors

Nancy Alfred, D.S.N., R.N. (U. of Ala.), Associate dean for undergraduate academic affairs.
*Laurie Badzek, J.D., M.S.N., R.N. (WVU).
*Pamela Deiriggi, Ph.D., R.N., C.P.N.P. (U. Tx.).
Patricia A. Diehl, M.S.N., R.N. (WVU). *Emerita.*
Imogene P. Foster, Ed.D., R.N. (WVU). Coordinator of rural health nursing education.
Debra Harr, Ed.D., R.N. (WVU).
Jean Hoff, M.P.H., R.N. (U. Pitt.). *Emerita.*
Nancy A. Koontz, M.S.N., R.N. (U. of Md.). *Emerita.*
Barbara Kupchak, Ph.D., R.N. (U. Tx.).
*June Larrabee, Ph.D., R.N. (U. of Tn.).
*Nan Leslie, Ph.D., R.N. (U. Pitt.).
Susan H. McCrone, Ph.D., R.N. (U. of Ut.). Chair Department of Health Promotion/Risk Reduction.
Susan Newfield, Ph.D., R.N. C.S. (U. Tx.).
Lois O'Kelley, M.S.N., R.N. (Wayne St. U.), *Emerita.*
*C. Lynne Ostrow, Ed.D., R.N. (WVU). Chair, Department of Health Restoration.
*Cynthia Persily, Ph.D., R.N. (U. of Pa.). Associate dean for academic affairs, Southern Region, and chair, Charleston Division.
Jacqueline Riley, M.N., R.N. (U. Fla.). *Emerita.*
Jane A. Shrewsbury, M.N.Ed., R.N. (U. of Pitt). *Emerita.*
*Patricia Simoni, Ed.D., R.N. (WVU).
Jacqueline Stemple, Ed.D., R.N. (WVU).
Fredona Stenger, M.S.N., R.N. (Boston U.).

Assistant Professors

Ann Cleveland, Ed.D., R.N. (WVU).
+Sandra Cotton, M.S., C.R.N.P. (U. of Md.). Director of Faculty Practice Plan, Clinical assistant professor.
Theresa Cowan, M.N., R.N.C.S. (WVU). Coordinator, GSC/WVU joint program.
+Daniel J. DeFeo, M.S.N., R.N. C.C.R.N., C.F.N.P. (WVU).
#Rose Ann DiMaria, Ph.D., R.N. C.N.S.N., (NYU). Charleston Division.
Suzanne Gross, Ph.D., R.N. (U. of Tx.). Assistant dean for student services.
Dorothy M. Johnson, Ed.D., R.N. (WVU).
Kathleen Marsland, M.S., R.N. (U. Colo.). *Emerita.*
*Marsha Mitchell, Ed.D., R.N. (WVU). Charleston Division.
Heidi Putman, R.N., M.S.N., D.N.Sc. (Widener U.).
Kari Sand-Jecklin, Ed.D., R.N. (WVU).
Elisabeth N. Shelton, D.N.Sc., R.N. (Widener U.).
Marilyn Smith, Ph.D. (U. of Tenn.).
+Martha Summers, M.S.N., R.N., C.F.N.P. (WVU).

Adjunct Professors

Joy Hinson Penticuff, Ph.D., MSN (Case Western Reserve).
Mary Ann Rosswurm, Ed.D., R.N., C.S., R.A.A.N. (U. of Cinn.).
Lynne Welch, Ed.D., R.N.

Adjunct Associate Professors

M. Sharon Boni, D.N.Sc., R.N. (The Catholic U. of America).
Charlotte Nath, Ed.D., R.N., C.D.E. (WVU).

Adjunct Assistant Professors

Patricia Johnston, Ed.D., R.N. (WVU).
Judith D. Klingensmith, M.S.N., R.N. (U. of Pitt.).
Janet Stout, M.S.N. (Syracuse U.).

Adjunct Instructors

Tasha Casto Anderson, M.S.N., R.N., F.N.P.-C. (WVU).
Barbara Banonis, M.S.N., R.N. (WVU).
Jacquelyn P. Bauer, M.S.N., N.N.P. (WVU).
Maribeth Beckner, M.S.N., R.N., C.N.O.R. (WVU).
Charlotte Bennett, R.N., M.S.N., C.N.A.A. (WVU).
Eleanor Berg, M.S.N., F.N.P., P.N.P. (WVU).
Angel Brown, C.N.M., F.N.P. (Marshall U.).
Karen Campbell, M.S.N., R.N. (Vanderbilt U.).
Jill Cochran, MSN, A.A.N.C-F.N.P. (WVU).
Susan Collins, M.S.N., R.N. (Duke U.).
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